

Data Background Document

Supporting Information on the
Four RCRA-Listed Hazardous Waste F002 & F005 Spent Solvent Chemicals
Examined in the Proposed Revisions to the 1981 "*Headworks Exemption*"
of the RCRA Hazardous Waste Mixture Rule for
Industrial Wastewater Treatment Systems:

- ! Benzene (71-43-2)
- ! 1,1,2-trichloroethane (vinyl trichloride, 79-00-5)
- ! 2-ethoxyethanol (ethylene glycol monoethyl ether, 110-80-5)
- ! 2-nitropropane (79-46-9)

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Preface

This background document contains industrial waste data tables and graphs assembled from five different USEPA public access databases. The purpose of this document is to provide exploratory and descriptive information about the following four spent solvent chemicals managed as RCRA hazardous waste in industrial wastewater management systems:

- ! Benzene (71-43-2)
- ! 1,1,2-trichloroethane (vinyl trichloride, 79-00-5)
- ! 2-ethoxyethanol (ethylene glycol monoethyl ether, 110-80-5)
- ! 2-nitropropane (79-46-9)

The USEPA Office of Solid Waste (OSW) applied some of the relevant information contained in this document for use as data inputs into (a) OSW's human health and environmental risk analysis, and (b) OSW's economic impact analysis, for the RCRA "*headworks exemption*" proposed rule which involves these four solvent chemicals. OSW requests public comment about the scope and contents of this document, during the designated public review period specified in the Federal Register announcement for the proposed rule.

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1. Introduction:

- ! Overview of RCRA Hazardous Waste “*Headworks Exemption*”**
 - ! Basic Data on the Four Chemicals as Industrial Solvents**
- ! Overview of Five USEPA Databases Referenced in this Document**

Resource Conservation & Recovery Act (RCRA)
Industrial Wastewater “*Headworks Exemption*” for Spent Solvents

A. 1981 RCRA “*Headworks Exemption*” [Interim] Final Rule (selected excerpt from 1981 Federal Register notice):

“Spent solvents are generated in a great many manufacturing and allied operations such as degreasing, maintenance, extraction, purification and constituent application procedures. (The same substances may also be used in a manufacturing process as chemical reactants or process intermediates, and, when so used, are not considered to be spent solvents). It is not always possible to collect and segregate spent solvents (e.g., various spills or incidental losses from degreasing or maintenance operations); those materials often drain or are washed into wastewater sewer systems. Also, it is often practical and reasonable to discharge the small quantities of spent solvent generated in diverse and separate manufacturing and allied operations into the nearest sewer connected to the wastewater treatment system. These small quantities of spent solvent are conveniently managed by and treated in the chemical or biological wastewater treatment system.

The Agency [EPA] has decided to deal with these situations by amending [40 CFR] section 261.3(a)(2) to provide that the mixture rule does not apply to mixtures of [40 CFR] section 261.31 spent solvents¹ in wastewaters if the combined concentrations of the spent solvent in the resulting mixture are no greater than 1 or 25 ppm, depending on the type of solvent (section 261.3(a)(2)(iv)(A) and (B) of today’s amendment). The lower limit applies to those listed spent solvents determined by the Agency’s Carcinogen Assessment Group (CAG) to possess substantial evidence of carcinogenicity, namely, carbon tetrachloride, tetrachloroethylene (perchloroethylene) and trichloroethylene. The upper limit applies to the remaining listed spent solvents which are listed in [40 CFR] 261.31 because they are toxic (T): methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, and spent chlorofluorocarbon solvents.” (Federal Register, Vol. 46, No. 221, 17 Nov 1981, p.56584)

B. 1981 RCRA “*Headworks Exemption*” [Interim] Final Rule as Codified in the Code of Federal Regulations (40 CFR 261.3(a)(2)(iv)(A)&(B)):

“[T]he following mixtures of solid wastes and [RCRA] hazardous wastes listed in [40 CFR 261.3] subpart D of this part are not hazardous wastes ... if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and:

“One or more of the following solvents listed in [40 CFR] section 261.31 — carbon tetrachloride, tetrachloroethylene, trichloroethylene — provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility’s wastewater treatment or pretreatment system does not exceed 1 part per million; or

“One or more of the following spent solvents listed in [40 CFR] section 261.31 — methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide isobutanol, pyridine, spent chlorofluorocarbon solvents ---- provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility’s wastewater treatment or pretreatment system does not exceed 25 part per million.”

¹ As of 01 July 2001, the Code of Federal Regulations (CFR) contains five spent solvent hazardous waste listings in the RCRA program (40 CFR 261.31 “*Hazardous Wastes From Non-Specific Sources*”):

- ! F001: Spent halogenated solvents used in degreasing (five specific chemicals + one chemical class)
- ! F002: Spent halogenated solvents (nine chemicals)
- ! F003: Spent non-halogenated solvents (nine chemicals)
- ! F004: Spent non-halogenated solvents (two chemicals + one chemical with three possible isomers)
- ! F005: Spent non-halogenated solvents (eight chemicals).

Spent Solvent Hazardous Waste Listings in the RCRA Regulatory Program (Source: 40 CFR 261.31, 01 July 2001)				
RCRA waste code	Wastecode description	Spent solvent count	Spent solvent chemicals included in listing	RCRA hazard code*
F001	Spent halogenated solvents used in degreasing	1	1,1,2-trichloroethane	T
		2	Carbon tetrachloride	
		3	Chlorinated fluorocarbons**	
		4	Methylene chloride	
		5	Tetrachloroethylene	
		6	Trichloroethylene	
F002	Spent halogenated solvents	1	1,1,1-trichloroethane	T
		2	1,1,2-trichloro-1,2,2-trifluoroethane	
		3	1,1,2-trichloroethane	
		4	Chlorobenzene	
		5	Methylene chloride	
		6	Ortho-dichlorobenzene	
		7	Tetrachloroethylene	
		8	Trichloroethylene	
		9	Trichlorofluoromethane	
F003	Spent non-halogenated solvents	1	Acetone	I
		2	Cyclohexanone	
		3	Ethyl acetate	
		4	Ethyl benzene	
		5	Ethyl ether	
		6	Methanol	
		7	Methyl isobutyl ketone	
		8	n-butyl alcohol	

RCRA waste code	Wastecode description	Spent solvent count	Spent solvent chemicals included in listing	RCRA hazard code*
		9	Xylene	
F004	Spent non-halogenated solvents	1	Cresols***	T
		2	Cresylic acid	
		3	Nitrobenzene	
F005	Spent non-halogenated solvents	1	2-ethoxyethanol	I, T
		2	2-nitropropane	
		3	Benzene	
		4	Carbon disulfide	
		5	Isobutanol	
		6	Methyl ethyl ketone	
		7	Pyridine	
		8	Toluene	

Explanatory Notes:

- (a) * T = toxic waste; I = ignitable waste (40 CFR 261.30)
- (b) ** "Chlorofluorocarbons" are a class of chemicals, not a single chemical.
- (c) *** "Cresols" may have three possible isomers (alternative chemical structures): meta-, ortho-, and para-cresol.

List of 16 RCRA-Listed Hazardous Waste Spent Solvents Eligible for the 1981 RCRA "Headworks Exemption" (Source: eligible spent solvents are listed at 40 CFR 261.3(a)(2)(iv)(A)&(B))					
Item	Solvent chemical name (listed alphabetically below)	Maximum allowable headworks wastewater concentration (ppm) for exemption	Spent solvent RCRA hazardous wastecode (40 CFR 261.31)	RCRA hazard code (ibid)*	USEPA PCS parameter code****
1	1,1,1-trichloroethane	25	F001 & F002	T	34506
2	Carbon disulfide	25	F005	I, T	77041
3	Carbon tetrachloride	1	F001	T	32102
4	Chlorobenzene	25	F002	T	34301
5	Chlorofluorocarbon solvents**	25	F001 (& F002)	T	16 codes*****
6	Cresols***	25	F004	T	77146, 79778, 81676
7	Cresylic acid	25	F004	T	None
8	Ortho-dichlorobenzene	25	F002	T	None
9	Isobutanol	25	F005	I, T	77033
10	Methyl ethyl ketone	25	F005	I, T	81595
11	Methylene chloride	25	F001 & F002	T	34423
12	Nitrobenzene	25	F004	T	34447
13	Pyridine	25	F005	I, T	77045
14	Tetrachloroethylene	1	F001 & F002	T	34475
15	Toluene	25	F005	I, T	34010 & 34481
16	Trichloroethylene	1	F001 & F002	T	39180

Explanatory Notes:

- (a) * T = toxic waste; I = ignitable waste (40 CFR 261.30).
- (b) ** The RCRA "headworks exemption" at 40 CFR 261.3(a)(2)(iv)(B) lists "spent chlorofluorocarbon solvents" as eligible (if under the 25 ppm wastewater concentration threshold), but as of the 01 July 2000 issue of the CFR, the RCRA spent solvent listings:
 - ! F001 lists "chlorinated fluorocarbons";
 - ! F002 lists 1,1,2-trichloroethane-1,2,2-trifluoroethane & trichlorofluoromethane;
 - ! F003, F004, F005 do not list chlorofluorocarbons.
- (c) *** Because of its six-carbon atom ring structure, cresols have three possible chemical isomers: ortho-, meta-, & para-cresol, which vary in the placement of the hydroxyl (-OH) and methyl (-CH₃) groups on their ring structure.
- (d) **** PCS: Permit Compliance System (USEPA Office of Water) http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.
- (e) ***** Chlorofluorocarbon PCS codes: 34488, 34668, 38671, 38674, 38675, 45025, 45028, 49541, 70010, 77647, 77652, 78143, 81611, 82637, 85667, 85668.

Other RCRA-Listed Hazardous Waste Spent Solvents Eligible for the 1981 "Headworks Exemption"			
(Source: comparison of the 01 July 2001 CFR list of all RCRA-listed hazardous waste spent solvent chemicals at 40 CFR 261.31, to the list of spent solvent chemicals listed in the RCRA "headworks exemption" at 40 CFR 261.1)			
Item	Solvent chemical name	RCRA hazardous waste spent solvent wastecode (40 CFR 261.31)	RCRA hazard code* (ibid)
1	1,1,2-trichloroethane	F002	T
2	2-ethoxyethanol	F005	I, T
3	2-nitropropone	F005	I, T
4	Acetone	F003	I
5	Benzene	F005	I, T
6	Cyclohexanone	F003	I
7	Ethyl acetate	F003	I
8	Ethyl benzene	F003	I
9	Ethyl ether	F003	I
10	Methanol	F003	I
11	Methyl isobutyl ketone	F003	I
12	n-butyl alcohol	F003	I
13	Xylene	F003	I

* T= toxic waste; I = ignitable waste (40 CFR 261.30).

**Identity, Properties, and RCRA Regulatory Codes for the
Four Targeted Solvent Chemicals**

Identity			Properties		RCRA Regulatory Codes			
Spent Solvent Chemical Name	CAS nr.	Synonyms*	Physical form*	Potential industrial uses* (solvent & non-solvent uses)	Spent solvent hazardous waste code	Offspec/ discarded product; spill/ container residues	Leachability hazardous waste code	Primary hazard property
					40 CFR 261.31	40 CFR 261.33	40 CFR 261.24	40 CFR 261.31 & 261.33
1,1,2-Trichloroethane	79-00-5	Vinyltrichloride	! Colorless liquid ! Boiling point = 113.7C (236.7F)	! Manufacturing 1,1-dichloroethylene ! Solvent for chlorinated rubber & various organic materials (fats, oils, resins, etc.)	F002	U227	None	T
Benzene	71-43-2		! Colorless liquid ! Boiling point = 80.1C (176.2F)	! Manufacturing styrene, phenol, detergents, organic chemicals, pesticide, plastics & resins, synthetic rubber, aviation fuel, pharmaceuticals, dye, explosives, PCB gasoline, tanning, flavors and perfumes, paints & coatings ! Nylon intermediates ! Food processing ! Ingredient in photographic chemicals	F005	U019	D018 (0.5 ppm)	I, T
2-Ethoxyethanol	110-80-5	! Ethylene glycol monoethyl ether ! Ethoxol ! Ethylglycol ! Cellosolve ! Dowanol EE ! Oxitol	! Colorless liquid ! Boiling point = 135C (275.0F)	! Solvent for nitrocellulose; natural & synthetic resins ! Mutual solvent for formulation of soluble oils; lacquers & lacquer thinners; dyeing & printing textiles; varnish removers; cleaning solutions; leather ! Anti-icing additive for aviation fuels.	F005	U359	None	I, T
2-Nitropropane	79-46-9				F005	U171	None	I, T

Explanatory Notes:

(a) CFR = Code of Federal Regulations (<http://www.access.gpo.gov/nara>).

(b) * Synonyms, physical form, and potential uses from "Handbook of Environmental Data on Organic Chemicals", 2nd edition, Van Nostrand Reinhold Co., 1983.

Alternative Example Definitions of “Solvent”

! “Industrial Solvents” (Vol.22, Table 1), from Kirk-Othmer Encyclopedia of Chemical Technology, 4th edition, John Wiley & Sons Inc., 1998:

Table 1. Functions of Industrial Solvents in End Uses

<u>Solvent function</u>	<u>Purpose</u>
1. dissolving	prepare solutions of polymers, resins, and other substances
2. softening	used as tackifiers, improve adhesion to substrate for better bonding
3. suspension/dispersion	pigments and other particulates
4. extraction	separate one material from another by selective dissolution
5. viscosity reduction	thin coatings to application viscosity
6. chemical intermediate	react with other compounds to form new substances
7. manufacturing/processing	improved workability during processing
8. heat-transfer fluid	remove heat of reaction in chemical manufacturing processes
9. reaction medium	an inert medium in which other compounds react

! Final Draft Hazardous Waste Listing Determination Background Document for Solvents II and III (05 March 2002):

The existing solvent listings in 40 CFR 261.31 apply to spent solvents that are used for their "solvent properties," as defined in the December 31, 1985 Federal Register (50 FR 53316). This definition of "solvent use" was included in the RCRA §3007 Solvent Use Questionnaire used to obtain information to support today's proposed rulemaking.

"**Solvents** are used for their "solvent" properties -- to solubilize (dissolve) or mobilize other constituents. Examples of such solvent use include degreasing, cleaning, and fabric scouring, use as diluents, extractants, and reaction and synthesis media, and for other similar uses. This definition is discussed in the listing determination for F001-F005 solvents, 50 FR 53316, December 31, 1985. A chemical is not used as a solvent if it is used only for purposes other than those described above."

! Merriam Webster’s Collegiate Dictionary, 10th edition, 1996

solvent (1671) 1: a usually liquid substance capable of dissolving or dispersing one or more other substances; 2: something that provides a solution; 3: something that eliminates or attenuates something especially unwanted.

! Standard Research Institute (SRI) Chemical Economics Handbook, Oct 2000

Benzene **solvent** consumption in US industry:

Because of the toxicity hazard, benzene is not used directly as a **solvent**. Some benzene-containing aromatic mixtures may be employed as solvents. Because environmental restrictions significantly limit aromatic solvent use outside of closed systems, the amount consumed is very small and is not covered in this report.

Alternative Example Definitions of “*Solvent*” (continued)

! USEPA Office of Air Quality Planning & Standards (OAQPS) Dec 1997

The rule defines organic **solvent** as “a volatile organic liquid that is used for dissolving or dispersing constituents in a coating or contact adhesive, adjusting the viscosity of a coating or contact adhesive, or cleaning equipment. When used in a coating or contact adhesive, the organic solvent evaporates during drying and does not become a part of the dried film.”

! San Joaquin Valley Unified Air Pollution Control District Organic Solvent Cleaning Project, November 27, 2001

Solvent: *any liquid containing a volatile organic compound or combination of volatile organic compounds, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, or for other similar uses. These liquids are principally derived from petroleum and include petroleum distillates, chlorinated hydrocarbons, chlorofluorocarbons, ketones, and alcohols.*”

The following sentences would not be included in the definition: “Solutions, emulsions, and dispersions of water and soap, or water and detergent, are not organic solvents. Soaps and detergents are water-based surfactants.”

! General Chemistry: Principles & Structure, Brady & Humiston, 1975:

There are certain terms that apply to all kinds of chemical solutions and that should be understood before we proceed further. The words **solvent** and **solute** are two of these. The general practice is to refer to the substance present in greatest proportion in a solution as the **solvent**, with all of the other substances in the solution considered **solutes**. In solutions that contain water, however, the **solvent** is nearly always considered to be water even when it is present in relatively small amounts. For example, a mixture of 96% H₂SO₄ and 4% H₂O by weight is called “concentrated sulfuric acid”, which implies that a large quantity of sulfuric acid is dissolved in a small amount of water; that is, H₂O is taken to be the **solvent** and H₂SO₄ the **solute**. It is often necessary to express the proportions of **solute** and **solvent** in a solution. This is done by specifying the concentration of the **solute** in the mixture. Concentration can be stated quantitatively in a variety of ways, as we shall see. The terms **concentrated** and **dilute** are used when we wish to speak, in qualitative terms, of the relative proportions of **solvent** and **solute**. In a **concentrated** solution there is a relatively large amount of **solute** present in the **solvent**; a **dilute** solution, on the other hand, possesses only a small quantity of **solute**. These two terms have meaning only in relationship to one another; they do not imply any specific quantities of **solute** in **solvent**.

1991 US Industrial Solvent Production				
(Source: Kirk-Othmer Encyclopedia of Chemical Technology, 1998, http://www.mrw.interscience.wiley.com/kirk).				
Item	Chemical Name	(1000 tons)	%	Cumltv %
1	1,2-dichloroethane	6,220.0	23.0%	23.0%
2	Benzene	5,209.0	19.3%	42.3%
3	Methanol	3,948.0	14.6%	56.9%
4	Xylene	2,866.0	10.6%	67.5%
5	Toluene	2,857.0	10.6%	78.0%
6	Acetone	1,065.0	3.9%	82.0%
7	2-propanol	609.0	2.3%	84.2%
8	1-butanol	599.0	2.2%	86.4%
9	Propylene glycol	302.0	1.1%	87.5%
10	2-ethylhexanol	298.0	1.1%	88.6%
11	1,1,1-trichloroethane	292.0	1.1%	89.7%
12	Methyl ethyl ketone	233.0	0.9%	90.6%
13	Chloroform	229.0	0.8%	91.4%
14	Diethylene glycol	221.0	0.8%	92.2%
15	Methylene chloride	177.0	0.7%	92.9%
16	Hexane	176.0	0.7%	93.6%
17	n-butyl acetate	168.0	0.6%	94.2%
18	Ethylene glycol monobutyl ether	156.0	0.6%	94.8%
19	Carbon tetrachloride	143.0	0.5%	95.3%
20	Ethanol	125.0	0.5%	95.7%
21	Ethanolamine	122.0	0.5%	96.2%
22	Ethyl acetate	118.0	0.4%	96.6%
23	Diethylene glycol monobutyl ether	109.0	0.4%	97.0%
24	Perchloroethylene	109.0	0.4%	97.4%
25	Diethanolamine	90.0	0.3%	97.8%
26	Triethanolamine	86.0	0.3%	98.1%
27	Methyl isobutyl ketone	82.0	0.3%	98.4%
28	1-propanol	78.7	0.3%	98.7%

Item	Chemical Name	(1000 tons)	%	Cumltv %
29	2-methyl-1-propanol	61.0	0.2%	98.9%
30	Triethylene glycol	53.0	0.2%	99.10%
31	n-propyl acetate	36.0	0.1%	99.24%
32	Diethylenetriamine	33.0	0.1%	99.36%
33	2-ethoxyethanol (ethylene glycol monoethyl ether)	32.0	0.1%	99.48%
34	Isobutyl acetate	26.0	0.1%	99.57%
35	Isopropyl acetate	24.0	0.1%	99.66%
36	Morpholine	24.0	0.1%	99.75%
37	Diethylene glycol monomethyl ether	15.0	0.1%	99.81%
38	Diethylene glycol monoethyl ether	13.0	0.0%	99.85%
39	Acetonitrile	10.0	0.0%	99.89%
40	Triethylamine	9.7	0.0%	99.93%
41	Diacetone alcohol	8.8	0.0%	99.96%
42	Diethylamine	7.4	0.0%	99.99%
43	Dibutylamine	3.7	0.0%	100.00%
44	1,1,2-trichloroethane	0 to <3.7	0.0%	100.00%
45	2-nitropropane	0 to <3.7	0.0%	100.00%
	Column total =	27,044.3	100.0%	

Categorization and Summary of Example Definitions/Applications of Wastewater Management “Headworks” Source: Sample of Definitions from a USEPA Office of Solid Waste Internet Search (19 Oct 2001)				
Item	Type of Definition	Definition Keywords	Implicit or Explicit Definition of Wastewater “Headworks” (website excerpts)	Internet Reference (URL)
1	Headworks location	Trunkline discharge	...the influent trunklines entered the plant grounds and when they discharged into the headworks facility...	http://www.h2o2.com/applications/municipal_wastewater/headworksodor.html
2		Tunnel	...remote headworks at the front of the tunnel	http://www.h2o2.com/applications/municipal_wastewater/headworksodor.html
3		Interceptor confluence	The headworks is the point where all the interceptors in the collection system come together at the WWTP...	http://www.ci.norman.ok.us/government/wastewatercoalition/grant.htm
4		Treatment plant entrance	...the wastewater facility involved the plant's headworks, the area where wastewater enters the treatment plant.	http://www.omiinc.com/articles/somersworth.html
5		Initial component of treatment facility	Headworks: With respect to a treatment facility, the initial component into which the influent wastewater flows.	http://www.epa.gov/owm/glossary.htm
6	Headworks functions	Preliminary treatment	The purpose of the headworks is to provide preliminary treatment prior to entering the main treatment basins at the WWTP...	http://www.ci.norman.ok.us/government/wastewatercoalition/grant.htm
7		! Screening ! Grit removal ! Flow measure	The headworks typically consists of screening (mechanical removal of larger materials contained in the wastewater), grit removal (wastewater is aerated allowing heavier materials such as sand and gravel to be removed), flow measurement and excess flow diversion...	http://www.ci.norman.ok.us/government/wastewatercoalition/grant.htm
8		! Flow measure ! Screening ! Pumping ! Grit removal	The existing headworks, placed into service in 1977, provided influent flow measurement, screening, influent pumping, and grit removal.	http://www.ci.Englewood.co.us/wwtp/areas/HW/prelimin.htm
9		! Screens WW ! Splits WW	Headworks: This is the first phase in the treatment process. The headworks screens and splits the wastewater flow to the secondary units [where] wastewater is biologically treated.	http://www.hawaiireserves.com/HRI/lwrf.htm
10		Solids removal	The headworks is the component of the wastewater treatment process where much of the large and easily settleable solid material is removed.	http://www.humboldt.edu/~ere_dept/marsh/flow2.html
11		! Preliminary treatment ! Mixing	The raw sewage influent is pumped into the plant headworks where it goes through preliminary treatment and is mixed with the return activated sludge from the secondary clarifiers.	http://www.ci.anderson.ca.us/pubworks/wstewatr.html

Item	Type of Definition	Definition Keywords	Implicit or Explicit Definition of Wastewater "Headworks" (website excerpts)	Internet Reference (URL)
12		Screening objects	Sewage is piped from communities to several headworks where bricks, logs and other large objects are screened out.	http://www.mwra.state.ma.us/sewer/html/sew_how.htm
13		Screening solids	The Headworks--preliminary solids screening.	http://members.iglou.com/kywaters/pretreat.htm
14	Headworks components	! Bar screens ! Grit tanks	Mechanical cleaning bar screens then remove rags, sticks, plastic and other foreign objects from the wastewater, this part of the treatment plant is called the headworks. Bar screens may be used before or after the grit tanks... Following the headworks wastewater flows into large tanks known as settling tanks...	http://www.rdn.bc.ca/Liquid_Waste/treatment.asp
15		Scrubbers	...into the headworks scrubbers...	http://www.h2o2.com/applications/municipal_wastewater/headworksodor.html
16		! Screens ! Receiving wells	Improvements to wastewater systems include design of headworks facilities such as screens, grit removal, and septage receiving wet wells,	http://www.provan-lorber.com/abouourfir/mun_andgov/
17		Grease/grit removal system	...has implemented a grease/grit removal system in a headworks at the station.	http://www.w-ww.com/plants/usa/maine/millinocket/
18		! Screen ! Compactor ! Pump station	Facilities included a screen and compactor at headworks pump station	http://www.olarson.com/adams.htm
19		Pump station	Following primary treatment, the variable speed headworks pump station will transport the raw wastewater to an oxidation ditch.	http://www.vaughnmalton.com/churchhill.html
20		! Bar screens ! Grit canal	The wastewater enters the plant at the Headworks, so named due to its assembly line location as well as its performed functions... As the water travels through portals, bar screens act as rakes to gather and remove trash to be disposed.... The last headworks site is the grit-settling canal, in which the grit is pumped out through air pumps and grease and scum is skimmed and removed from the wastewater.	http://pud.ci.college-station.tx.us/wastewater_treatment.htm
21		! Screw pumps ! Bar screens ! Flow measure ! Grit separators	The "headworks" component of Arcata's wastewater treatment plant is the first phase in the treatment of raw sewage and consists of technologies aimed at removing inorganic materials from the raw sewage. The technologies include two screw pumps that lift the sewage fifteen feet and pass it through bar screens, a parshall flume (for flow measurement) and grit separators before it enters the clarifiers.	http://www.epa.gov/owow/wetlands/construc/arcata/11stage.html

Item	Type of Definition	Definition Keywords	Implicit or Explicit Definition of Wastewater "Headworks" (website excerpts)	Internet Reference (URL)
22		! Bar screening ! De-gritting ! Pumps/mixers ! Screw conveyors	At the headworks facility, wastewater enters the treatment plant and requires screening, de-gritting, and other physical processes to prepare the water for further treatment... headworks equipment includes bar screens, pumps and mixers, screw conveyors, odor control, and process monitoring equipment, as well as operational and maintenance services.	http://www.usfilter.com/water/ProductOfferings.asp?WID=19
23		! Preliminary treatment ! Trash racks ! Mechanical screws ! Grit chambers	The first treatment units ... are "preliminary treatment" processes where potentially equipment-damaging materials are removed (the headworks). Large debris is removed as wastewater flows through trash racks. Next, finer materials are removed by mechanical fine screens. Screened flow is directed to grit chambers where abrasive materials ... are removed. "Primary treatment" follows the headworks ... in primary clarifiers so that solids can be settled or floated out of the wastewater. Biological treatment follows primary clarification...	http://www.lfucg.com/Sewers/TBTour.asp
24		Preliminary treatment	The purpose of the headworks facilities is to provide preliminary treatment, removing materials in wastewater that could damage pumps and other process equipment. The order of preliminary treatment is course bar racks, fine screens and grit removal.	http://www.lfucg.com/Sewers/TBTHeadworks.asp

Explanatory Notes:

- (a) This table represents a non-probability sample (i.e. purposive convenience sampling method) collected Oct 2001 by USEPA-OSW-EMRAD, and is not representative of all example definitions/ contexts for wastewater "headworks", nor does this list constitute USEPA endorsement of any particular technology, manufacturer, or organization.
- (b) Items in this table identified and collected using Internet browser search keywords: {"headworks" + "wastewater"}, and {"headworks" + "wastewater" + "industrial"}.
- (c) Internet website context for items in this table may be either industrial or municipal wastewater treatment systems.

Overview & Comparison of Five USEPA Databases Queried in this Document

This document presents tables and graphs of secondary data collected by OSW-EMRAD in 2001 and 2002 from five USEPA public access databases. As compared in the table below, each database has a different scope (data coverage); consequently, these databases are complementary, but also to a limited extent overlapping because information from some industrial facilities may appear in more than one database.

Comparison of Scope and Contents of Four USEPA Databases on Industrial Wastes							
USEPA database	Database name	Data year	Type of waste covered in database	Facilities covered in database		Units of analysis	Waste chemicals covered
				Facility type	Facility count		
1. BRS	Biennial Reporting System	Biennial since 1989	Industrial hazardous solid waste	RCRA hazardous waste: ! large quantity generators (LQGs) ! treatment, storage, disposal, recovery facilities	! 20,316 LQGs (40.7 million tons non-wastewaters* in 1997) ! 2,025 TSDRs (37.7 million tons haz waste in 1997)	! Facility ! RCRA wastecode ! Waste source ! Waste physical form ! Waste management method ! SIC code ! Geographic location	Does not directly contain chemical data (indirectly by RCRA wastecodes)
2. RCRA Info	Resource Conservation & Recovery Act Information		Industrial hazardous solid waste	RCRA hazardous waste: ! large quantity generators (LQGs) ! small quantity generators (SQGs) ! transporters ! treatment, storage disposal, recovery facilities		! Facility ! Waste management method ! SIC code ! Geographic location	Does not directly contain chemical data
3. TRI	Toxics Release Inventory	Annual since 1987	! Industrial hazardous wastes ! Industrial non-hazardous wastes ! Other industrial releases of chemicals to air, water, land	Manufacturing facilities**: ! >10 employees ! >12.5 tons/year chemical mfg/ processing, or ! >5 tons chemical used/year	22,639 facilities (representing 3.9 million tons chemicals released in 1999)	! Facility ! Establishment within facility ! Chemical in waste ! SIC code ! Geographic location	. 650 (1999)

USEPA database	Database name	Data year	Type of waste covered in database	Facilities covered in database		Units of analysis	Waste chemicals covered
				Facility type	Facility count		
4. NHWCS	National Hazardous Waste Constituent Survey	1993 one-time survey (single year snapshot); survey conducted 1996; published 19 Nov 1999	Industrial hazardous solid waste	RCRA Hazardous Waste Treatment, Storage, Disposal & Recovery (TSDR) Facilities	221 TSDRs representing: ! 1,760 haz waste-streams ! 216 million tons/year haz waste	! Facility ! Wastestream ! Chemical in waste ! Same as BRS units of analysis	724
5. SIS	Surface Impoundment Study	1998 one-time survey (single year snapshot); published 26 March 2001	Industrial non-hazardous solid wastes managed in surface impoundments	Targeted primarily at manufacturing facilities in six sub-sectors: ! paper/pulp ! chemicals ! petroleum/coal ! rubber/plastics ! primary metal ! electronics	! Main sample data from 155 facilities with 523 surface impoundments ! Survey results extrapolated to universe of 7,459 facilities with 16,782 surface impoundments	! Facility ! Wastestream ! SIC code ! Geographic location ! Type/size & other surface impoundment characteristics ! Waste chemical in surface impoundment	256

Explanatory Notes:

- (a) * The Office of Solid Waste dropped reporting of wastewaters (if not injected underground) from the BRS National Analysis report beginning with the 1997 data year.
- (b) ** Starting with the 1998 data year, the TRI added seven sub-sectors: (1) electric utilities, (2) coal mining, (3) metal mining, (4) chemical wholesalers, (5) petroleum bulk plants & terminals, (6) solvent recovery, and (7) RCRA hazardous waste treatment, storage and disposal facilities.
- (c) These three databases are available for public access via the internet; see the final section of this document for website addresses and screen shots.

RCRA "Headworks Exemption" Proposed Rule Investigation of Four Solvent Chemicals: Count of Potentially Relevant US Facilities Based on Alternative Exploratory Queries of Four USEPA Databases						
USEPA database	Query nr.	QUERY INPUT: Database Query Criteria (Data Extraction Filters)			QUERY OUTPUT: Count of potentially relevant facilities	
		RCRA wastecode query criterion	Wastewater query criterion	Solvent chemical identity query criterion		
BRS: Biennial Reporting System	1	F002 or F005	None applied (i.e. all waste physical forms, in addition to wastewaters, as well as all waste management systems, in addition to wastewater treatment systems)	Not available as query criterion (data screen)	1997*	All physical forms & waste management systems = 9,119 generators
	2		! B101 or B201 = solvent wastewater physical form, and ! M071 to M099, M121 to M123, M133 to M136 = wastewater treatment systems			Generation: ! 157 generators ! 50.5 million tons Management: ! 175 managers ! 383 wastestreams ! 51.5 million tons ! 39 states
	3		A75 = wastewater treatment source			92 generators
	4		A76= sludge dewatering source			12 generators
TRI: Toxics Release Inventory	5	Not available as query criterion	None applied (i.e. all waste physical forms, in addition to wastewaters)	! Benzene ! 2-ethoxyethanol ! 1,1,2-TCA ! 2-nitropropane	1999**	Solvent use (51 states): ! Benzene = 437 ! 2ethoxy = 32 ! 112-TCA = 22 ! 2nitropropane = 5
	6		W = wastewater physical form			All uses wastewater: ! Benzene = 390 ! 2ethoxy = 7 ! 112-TCA = 19 ! 2nitropropane = 3
NHWCS: National Haz Waste Constituent Survey	7	F002 or F005	Three physical form groups: ! liquids (form codes = B101 to B219) ! solids (form codes = B301 to B409) ! sludges (form codes = B501 to B609)	! Benzene ! 2-ethoxyethanol ! 1,1,2-TCA ! 2-nitropropane	1993 (only year available in this database)	31 (managing one or more of the solvent chemicals)
SIS: Surface Impoundment Study	8	Not applicable; SIS only covers non-haz wastes	WW = influent wastewaters into surface impoundments	! Benzene ! 2-ethoxyethanol ! 1,1,2-TCA ! 2-nitropropane	1998	Impoundments with chemical present: ! Benzene = 1,108 ! 2ethoxy = 0 ! 112-TCA = 14 ! 2nitropropane = 0
Explanatory Notes:						
(a) * BRS: prior biennial data years (1989, 1991, 1993, 1995) also available via the USEPA Envirofacts website (see URL elsewhere in this document).						
(b) ** TRI: prior data years (annually 1987 to 1998) are available via the USEPA Envirofacts TRI website.						

**2. USEPA Office of Solid Waste
RCRA Hazardous Waste
Biennial Reporting System (BRS)**

Database Query Findings

**Count of 1997 USEPA Biennial Reporting System (BRS*):
Facilities Reporting Generation or Management (Treatment, Storage or Disposal)
of F002 or F005 RCRA-Listed Wastes**

Type of RCRA Hazardous Waste Handler	F002**	F005**	Row totals (non-duplicative)
Count of facilities (LQGs) which generate the waste	4,175	7,835	9,119
Count of generators which manage the waste onsite	429	864	1,045
Count of generators which transfer the waste for offsite management	4,104	7,731	8,999
Non-duplicative count of facilities which handle (either generate or manage) the waste	4,363	8,033	9,314

Explanatory Notes:

(a) * BRS= Contains data supplied by (a) RCRA hazardous waste large quantity generators (LQGs), and (b) facilities which receive RCRA hazardous wastes from offsite, and manage (treat, store or dispose) the waste onsite, during the reporting year (see http://www.epa.gov/enviro/html/brs/brs_query.html).

(b) ** By USEPA regulatory definition (40 CFR 261.31 and 40 CFR 261 Appendix VII):

- ! F002 wastes may contain 1,1,2-Trichloroethane (in addition to at least eight other solvent chemicals)
- ! F005 wastes may contain benzene, 2-ethoxyethanol, and/or 2-nitropropane (in addition to at least five other solvent chemicals)

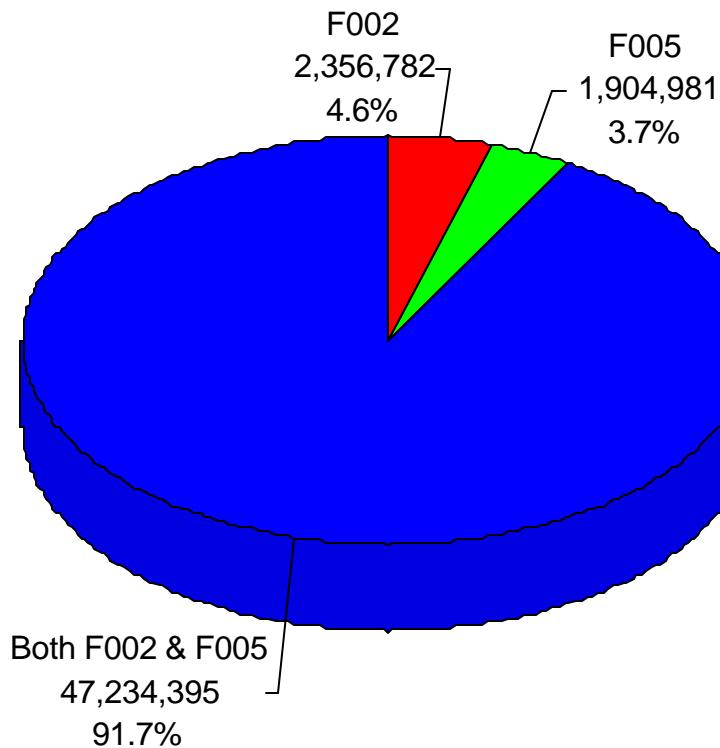
Summary of F002 & F005 Spent Solvent RCRA Hazardous Waste Generation (1997 BRS) Count of Generator Facilities & Associated Annual Quantity Managed			
Spent solvent RCRA wastecode	Any type of waste treatment system*		Solvent in aqueous waste physical form (B101 or B201), and managed in a wastewater treatment system***
	All waste physical forms**	Solvent in aqueous waste physical form (B101 or B201)	
F002	4,175 (59.6 million tons/year)	352 (37.0 million tons/year)	112 (36.8 million tons/year)
F005	7,835 (57.6 million tons/year)	400 (34.2 million tons/year)	100 (34.0 million tons/year)
Either F002 or F005 (non-duplicative column total)	9,199 (60.6 million tons/year)	603 (37.0 million tons/year)	157 (36.8 million tons/year)
F001 to F005	61.8 million tons/year	37.6 million tons/year	37.5 million tons/year

Explanatory Notes:

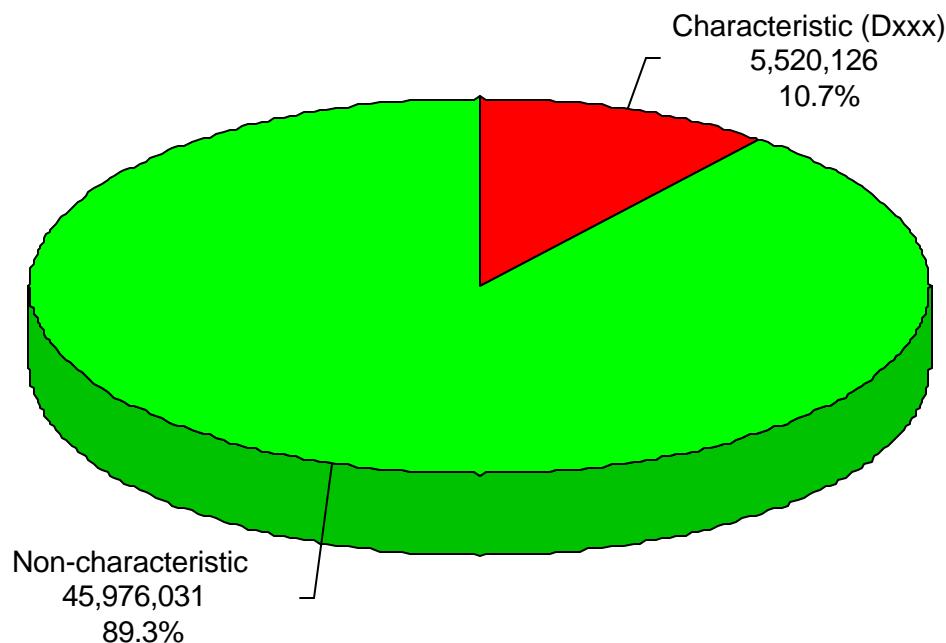
- (a) * Any waste treatment system may include metals recovery, solvents recovery, energy recovery (reuse as a fuel), fuel blending, incineration, wastewater treatment, sludge treatment, stabilization, other treatment, disposal (land application, landfill, surface impoundment, deepwell injection, direct discharge to sewer/POTW, direct discharge to surface water).
- (b) ** All waste physical forms may include different types of waste liquids, waste sludges, waste solids, or waste gases.
- (c) Waste quantities (millions tons/year) from the Office of Solid Waste 1996 "National Hazardous Waste Constituent Survey" database.
- *** Wastewater treatment system codes (BRS) = M071-M099, M121-M129, M133-M136.

Summary of F002 & F005 Spent Solvent Wastewater Generation (1997 BRS): ! If solvent wastewater physical form only (B101 or B201), and ! If waste managed in a wastewater treatment system (M071-M099,M121-M123,M133-M136)			
Metric	F002	F005	Row total (non-duplicative)
A. F002/F005 Waste Generation (1997):			
Count of US generator facilities	112	100	157
Count of wastestreams generated	220	254	344
Tons generated (annual)	47.7 million	49.4 million	50.5 million
Number of states in which generated	33	33	39
B. F002/F005 Waste Management (1997):			
Count of US management facilities	128	110	175 ! onsite = 71 ! offsite = 98 ! both on & offsite = 6
Count of wastestreams managed	248	278	383
Tons managed (annual)	49.6 million	49.1 million	51.5 million
Number of states in which managed	33	33	39
Explanatory Note: Management quantities may be larger than generation quantities because some wastestreams are transported for management off-site, which are double-counted in the management quantities.			

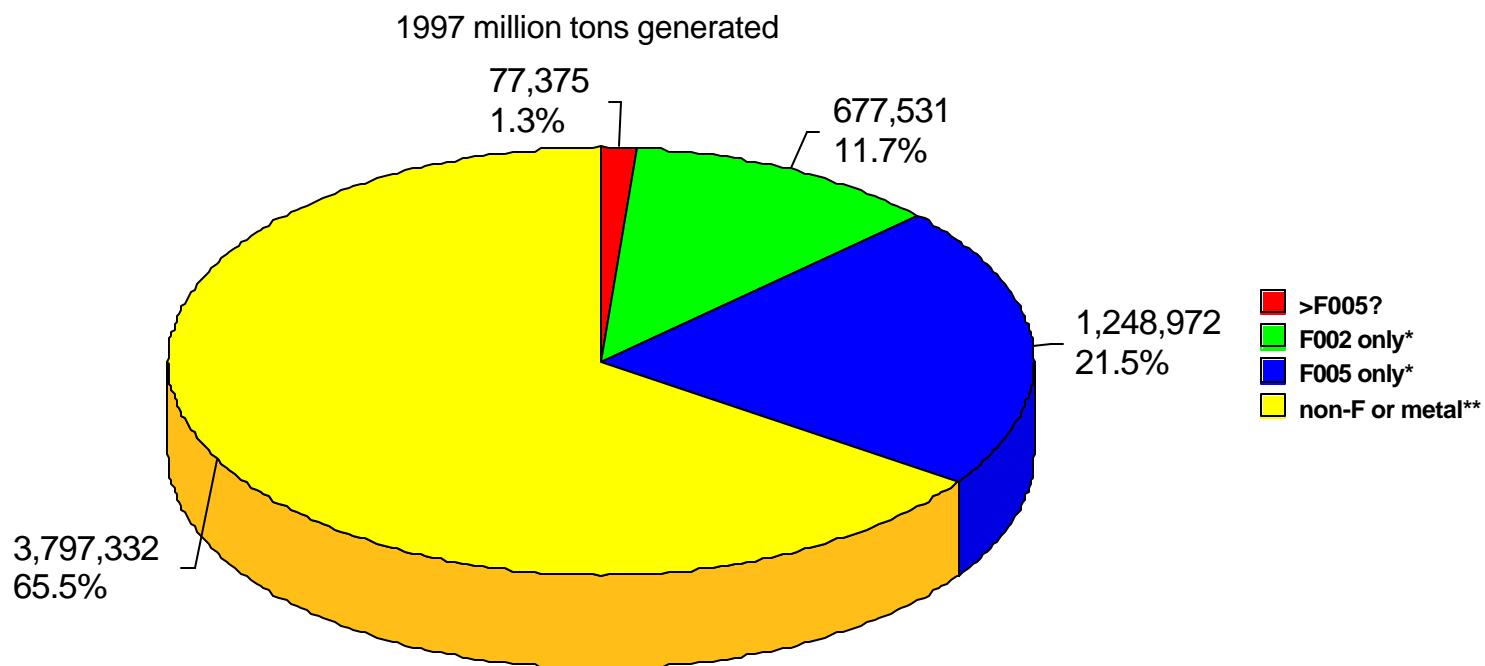
Type of RCRA Hazardous Waste Spent Solvent Designated
Based on 383 Wastestreams (51.5 million tons) Managed by 175 Facilities in 1997



**Proportion of Characteristic Hazardous F002/F005 Spent Solvents
Based on 383 Wastestreams (51.5 million tons) Managed by 175 Facilities (1997 BRS)**



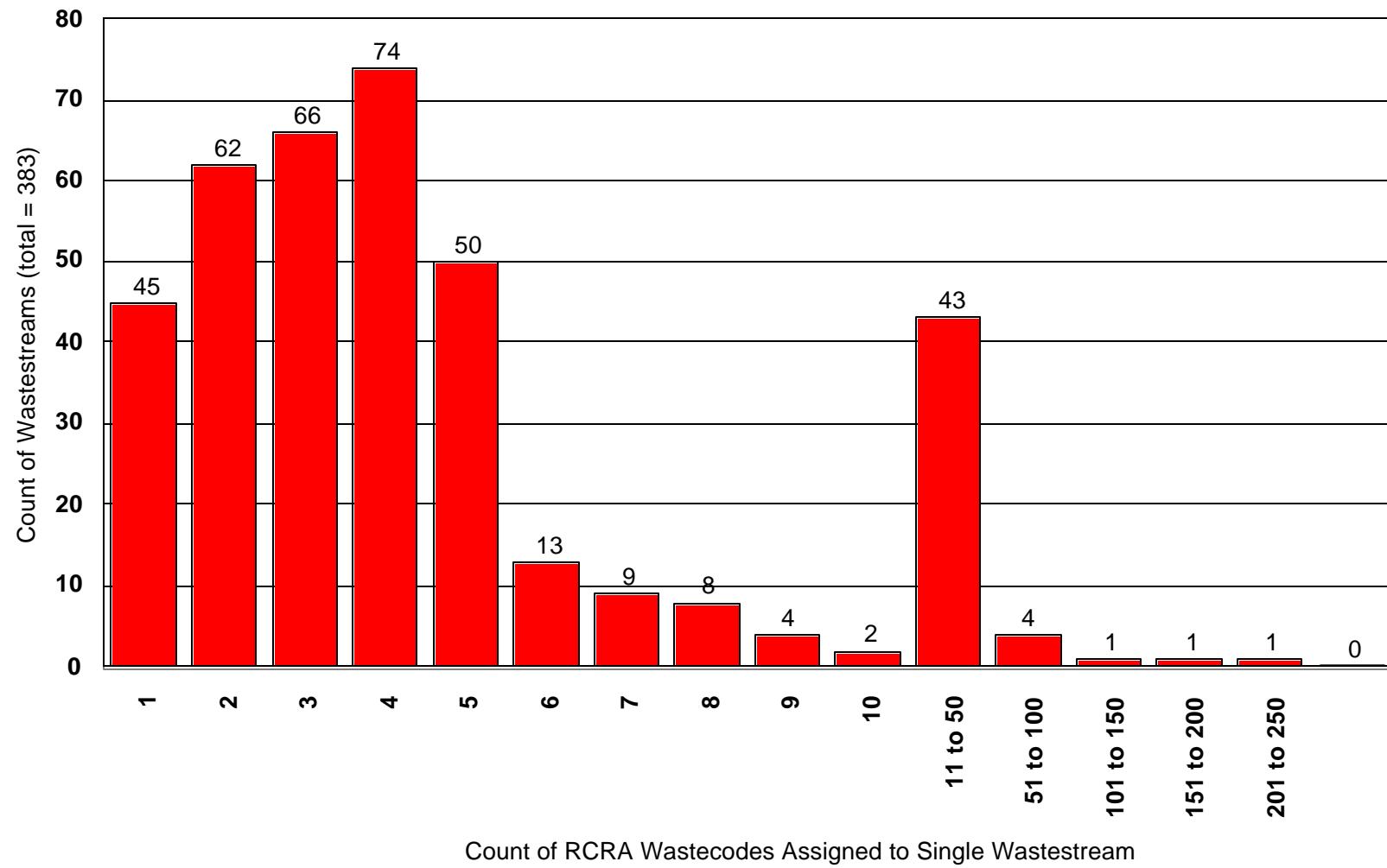
1997 F002 & F005 Spent Solvent Generation (BRS)



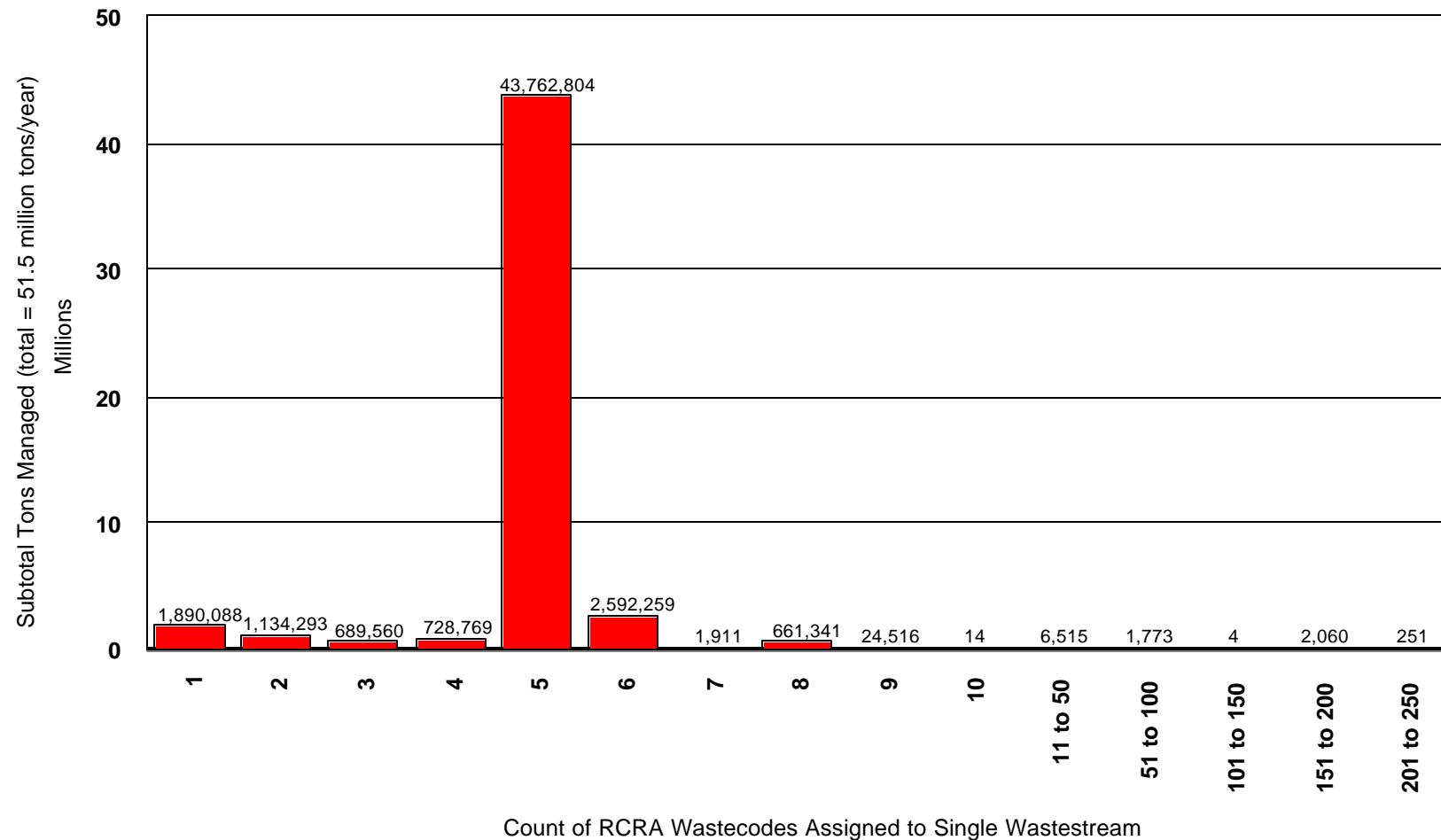
*Also may have D001, D002, or D003 (codes which are assumed to go-away upon mixing the spent solvent with wastewater)

** D004 to D011 indicates inorganics (metals); >D011 represent organics (mostly solvents); "non-F = Kxxx, Pxxx, Uxxx.

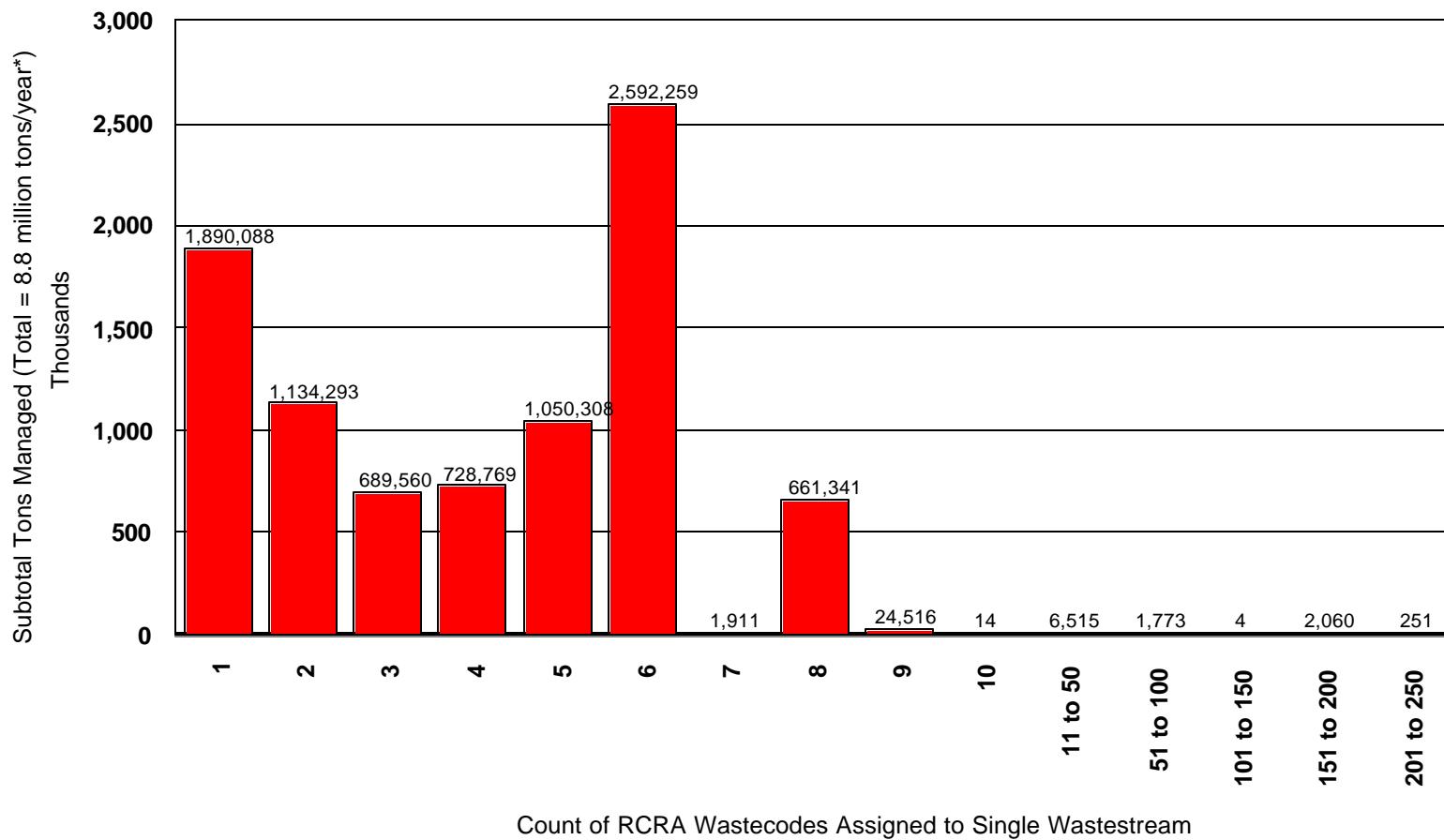
**Distribution Count of RCRA Wastecodes Assigned to F002 and F005 Spent Solvent Wastewaters
(Based on 383 wastewater wastestreams totaling 51.5 million tons managed in 1997 BRS database)**



Distribution Count of RCRA Wastecodes Assigned to F002 and F005 Spent Solvent Wastewaters
(Based on 383 wastewater wastestreams totaling 51.5 million tons managed in 1997 BRS database)

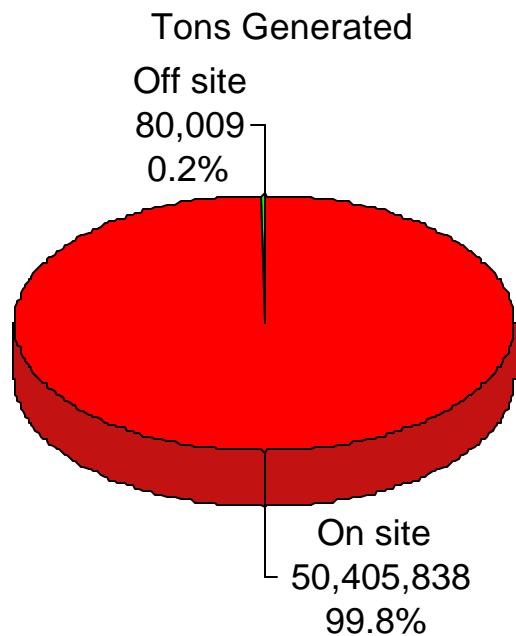


**Distribution Count of RCRA Wastecodes Assigned to F002 and F005 Spent Solvent Wastewaters
Based on 382 wastewater wastestreams totaling 8.8 million tons managed in 1997 BRS database*)**

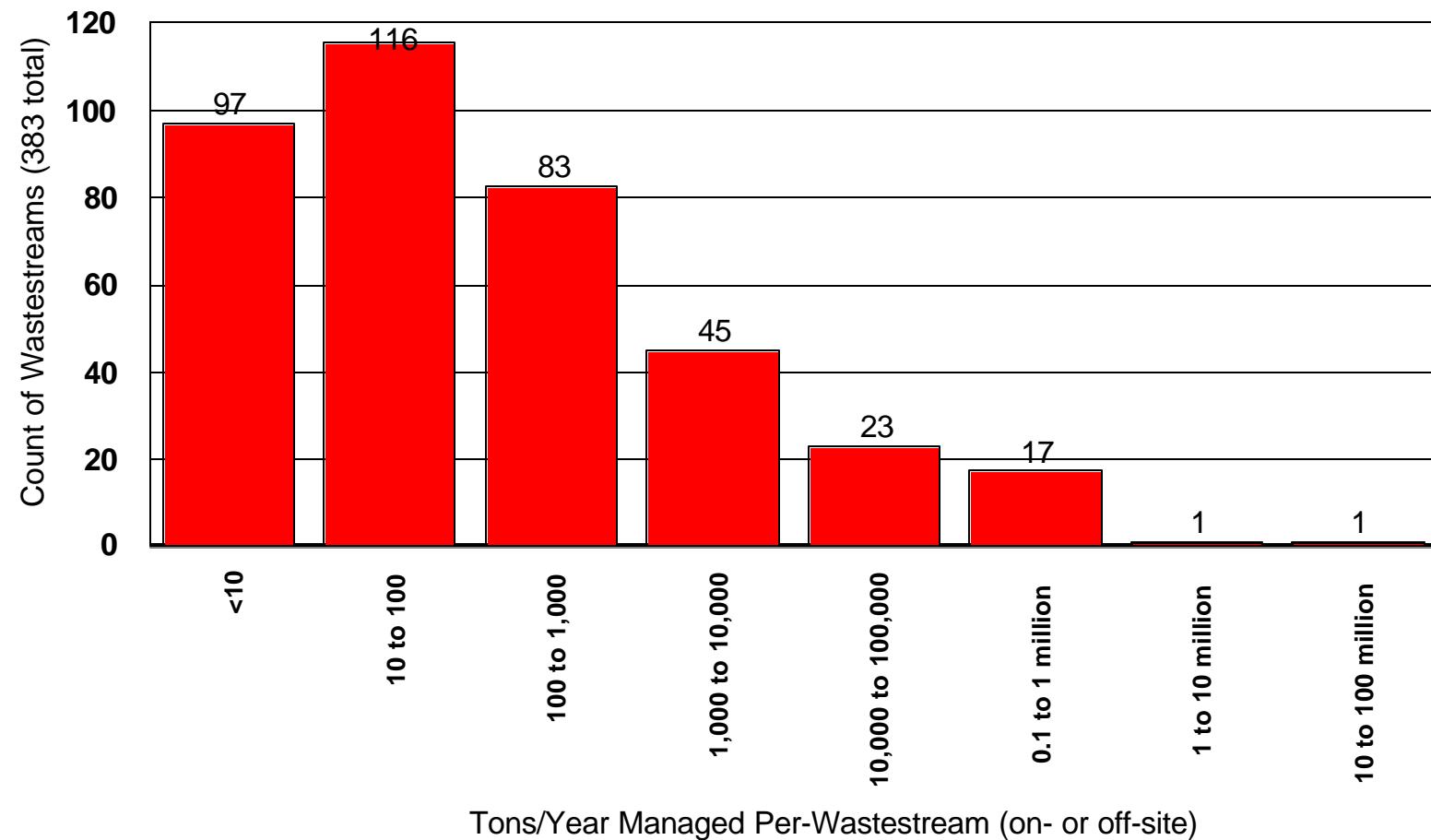


* 8.8 million tons subtotal based on 382 wastestreams, excluding 42.7 million tons associated with a single large wastestream managed at a si

**Proportion (Tons/Year) of F002 or F005 Spent Solvent Wastewaters Managed Onsite vs Offsite
(Based on 344 wastewater wastestreams totaling 50.5 million tons generated in 1997 BRS database)**



Distribution of F002 & F005 Spent Solvent Wastewater Quantities Managed
Based on 175LQG facilities managing F002 or F005 wastes in wastewater treatment systems (1997 BRS)



Sources of F002 & F005 Spent Solvent RCRA Hazardous Wastes:

Types of Industrial Processes & Activities (Source: 1997 BRS)

A. Alpha-Numeric Sort:

Item	BRS Waste Source Code	Waste Source Defined	Count of wastestreams	1997 Generated (tons)	Item %
1		Source not provided in BRS	2	42,701,768.5	84.582%
2	A01	Cleaning & degreasing: stripping	14	18,107.3	0.036%
3	A03	Cleaning & degreasing: caustic (alkali) cleaning	3	901.5	0.002%
4	A04	Cleaning & degreasing: flush rinsing	11	304,581.6	0.603%
5	A06	Cleaning & degreasing: spray rinsing	5	4,657.4	0.009%
6	A09	Cleaning & degreasing: clean-out process equipment	22	376,997.8	0.747%
7	A19	Cleaning & degreasing: other	10	2,397.0	0.005%
8	A21	Surface prep & finishing: painting	5	642.1	0.001%
9	A22	Surface prep & finishing: electroplating	2	3,401.4	0.007%
10	A27	Surface prep & finishing: etching	1	223.1	0.000%
11	A29	Surface prep & finishing: other	5	2,194.1	0.004%
12	A31	Processes other than surface prep: product rinsing	11	237,845.0	0.471%
13	A32	Processes other than surface prep: product filtering	10	9,471.4	0.019%
14	A33	Processes other than surface prep: product distillation	6	9,452.6	0.019%
15	A34	Processes other than surface prep: product solvent extraction	12	2,517,154.6	4.986%
16	A35	Processes other than surface prep: by-product processing	5	7,629.3	0.015%
17	A36	Processes other than surface prep: spent catalyst removal	2	1,539.9	0.003%
18	A37	Processes other than surface prep: spent process liquids removal	16	134,338.9	0.266%
19	A49	Processes other than surface prep: other	19	792,557.3	1.570%
20	A51	Production or service derived one-time & intermittent processes: leak collection	4	2,193.4	0.004%
21	A53	Production or service derived one-time & intermittent processes: spill cleanup	3	11.8	0.000%
22	A57	Production or service derived one-time & intermittent processes: discarding offspec material	1	0.3	0.000%
23	A58	Production or service derived one-time & intermittent processes: discarding out-of-date products	1	0.2	0.000%
24	A59	Production or service derived one-time & intermittent processes: other	6	5,359.0	0.011%
25	A60	Production or service derived one-time & intermittent processes: sludge removal	1	0.9	0.000%
26	A61	Remediation derived waste: Superfund remedial action	2	9.3	0.000%
27	A63	Remediation derived waste: RCRA corrective action at solid waste management unit	11	1,691,544.8	3.351%
28	A64	Remediation derived waste: RCRA closure of hazardous waste management unit	2	282.5	0.001%
29	A65	Remediation derived waste: underground storage tank cleanup	4	957.7	0.002%
30	A69	Remediation derived waste: other	11	12,437.8	0.025%
31	A71	Pollution control or waste treatment processes: filtering/screening	2	2.3	0.000%
32	A73	Pollution control or waste treatment processes: solvents recovery	15	651,063.4	1.290%
33	A75	Pollution control or waste treatment processes: wastewater treatment	12	248,060.8	0.491%
34	A76	Pollution control or waste treatment processes: sludge dewatering	1	11.1	0.000%
35	A78	Pollution control or waste treatment processes: air pollution control devices	5	7,241.1	0.014%
36	A79	Pollution control or waste treatment processes: leachate collection	1	260.0	0.001%
37	A89	Pollution control or waste treatment processes: other	41	5,842.6	0.012%
38	A93	Other processes: closure of management unit or equipment other than by remediation in A6x	1	0.8	0.000%
39	A94	Other processes: laboratory wastes	17	6,050.8	0.012%
40	A99	Other processes: other	42	728,655.4	1.443%
Column total =			344	50,485,846.6	100.000%

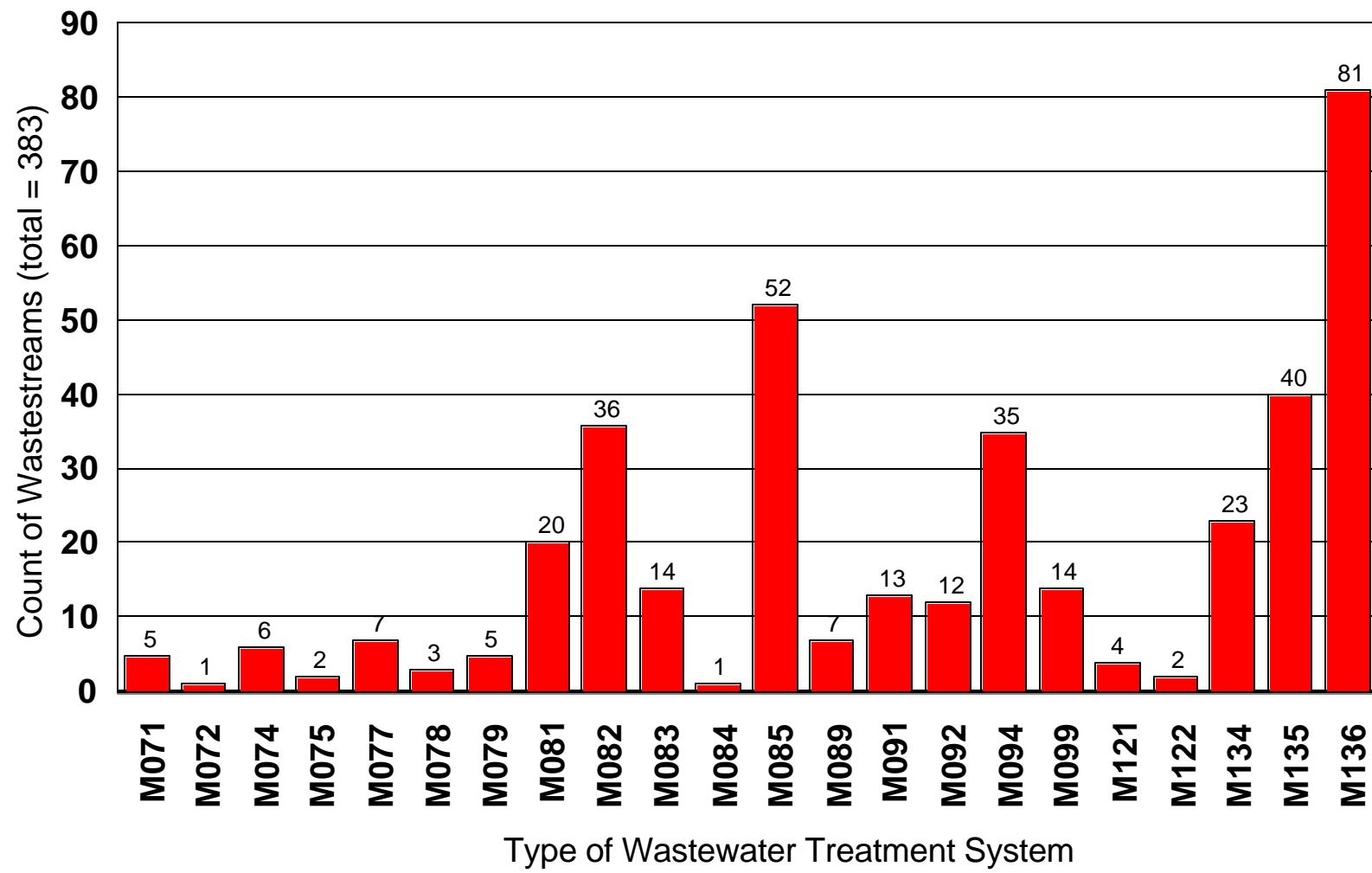
Sources of F002 & F005 Spent Solvent RCRA Hazardous Wastes:

Types of Industrial Processes & Activities)

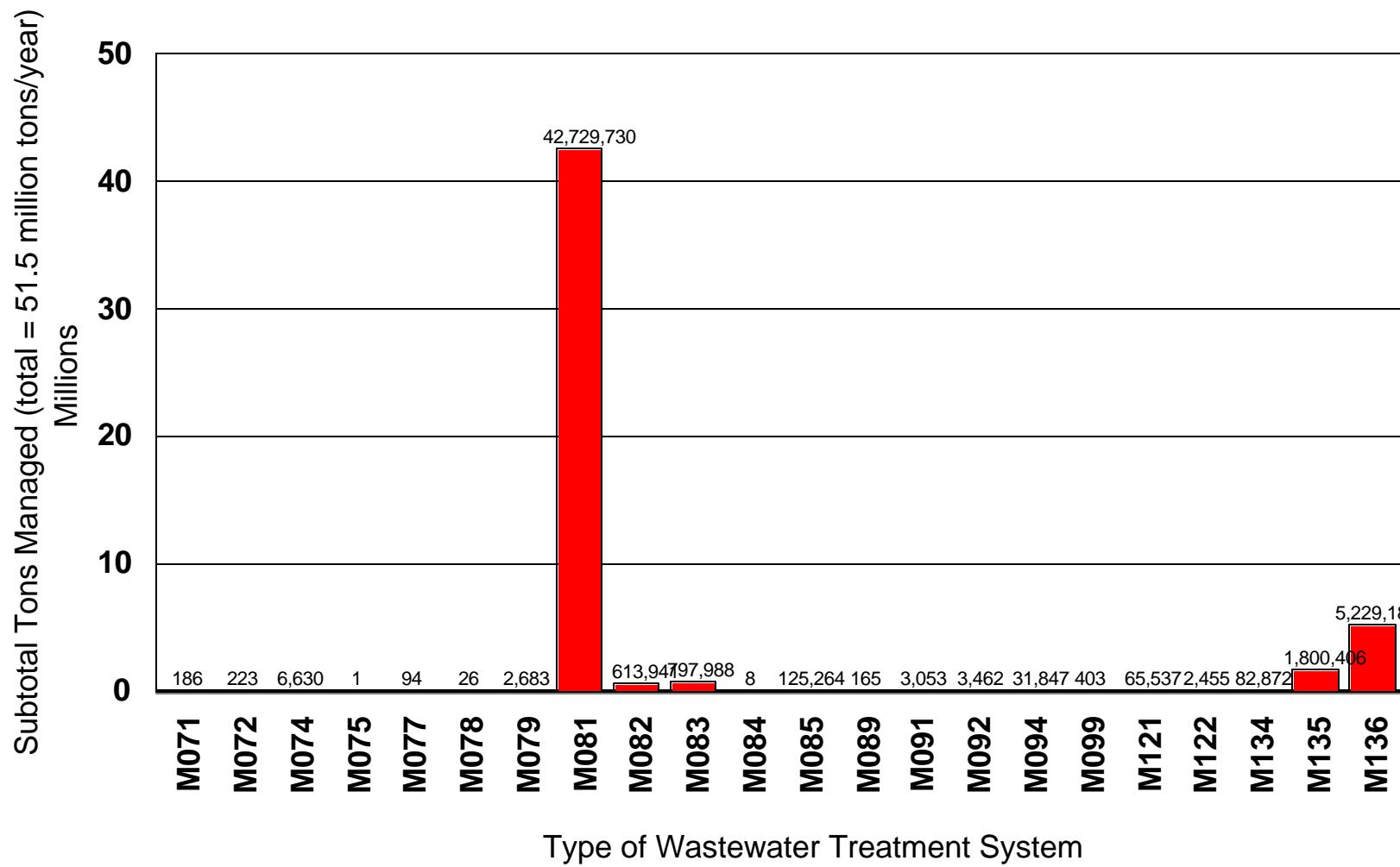
B. Descending Quantity Sort

Item	Waste Source Code	Waste Source Defined	1997 Generated (tons)	Item %	Cumltv %
1		Source not provided in BRS	42,701,768.5	84.582%	84.6%
2	A34	Processes other than surface prep: product solvent extraction	2,517,154.6	4.986%	89.6%
3	A63	Remediation derived waste: RCRA corrective action at solid waste management unit	1,691,544.8	3.351%	92.9%
4	A49	Processes other than surface prep: other	792,557.3	1.570%	94.5%
5	A99	Other processes: other	728,655.4	1.443%	95.9%
6	A73	Pollution control or waste treatment processes: solvents recovery	651,063.4	1.290%	97.2%
7	A09	Cleaning & degreasing: clean-out process equipment	376,997.8	0.747%	98.0%
8	A04	Cleaning & degreasing: flush rinsing	304,581.6	0.603%	98.6%
9	A75	Pollution control or waste treatment processes: wastewater treatment	248,060.8	0.491%	99.1%
10	A31	Processes other than surface prep: product rinsing	237,845.0	0.471%	99.5%
11	A37	Processes other than surface prep: spent process liquids removal	134,338.9	0.266%	99.80%
12	A01	Cleaning & degreasing: stripping	18,107.3	0.036%	99.84%
13	A69	Remediation derived waste: other	12,437.8	0.025%	99.86%
14	A32	Processes other than surface prep: product filtering	9,471.4	0.019%	99.88%
15	A33	Processes other than surface prep: product distillation	9,452.6	0.019%	99.90%
16	A35	Processes other than surface prep: by-product processing	7,629.3	0.015%	99.91%
17	A78	Pollution control or waste treatment processes: air pollution control devices	7,241.1	0.014%	99.93%
18	A94	Other processes: laboratory wastes	6,050.8	0.0120%	99.94%
19	A89	Pollution control or waste treatment processes: other	5,842.6	0.0116%	99.95%
20	A59	Production or service derived one-time & intermittent processes: other	5,359.0	0.0106%	99.96%
21	A06	Cleaning & degreasing: spray rinsing	4,657.4	0.0092%	99.97%
22	A22	Surface prep & finishing: electroplating	3,401.4	0.0067%	99.98%
23	A19	Cleaning & degreasing: other	2,397.0	0.0047%	99.98%
24	A29	Surface prep & finishing: other	2,194.1	0.0043%	99.99%
25	A51	Production or service derived one-time & intermittent processes: leak collection	2,193.4	0.0043%	99.99%
26	A36	Processes other than surface prep: spent catalyst removal	1,539.9	0.0031%	99.99%
27	A65	Remediation derived waste: underground storage tank cleanup	957.7	0.0019%	100.00%
28	A03	Cleaning & degreasing: caustic (alkali) cleaning	901.5	0.0018%	100.00%
29	A21	Surface prep & finishing: painting	642.1	0.0013%	100.00%
30	A64	Remediation derived waste: RCRA closure of hazardous waste management unit	282.5	0.0006%	100.00%
31	A79	Pollution control or waste treatment processes: leachate collection	260.0	0.0005%	100.00%
32	A27	Surface prep & finishing: etching	223.1	0.0004%	100.00%
33	A53	Production or service derived one-time & intermittent processes: spill cleanup	11.8	0.0000%	100.00%
34	A76	Pollution control or waste treatment processes: sludge dewatering	11.1	0.0000%	100.00%
35	A61	Remediation derived waste: Superfund remedial action	9.3	0.0000%	100.00%
36	A71	Pollution control or waste treatment processes: filtering/screening	2.3	0.0000%	100.00%
37	A60	Production or service derived one-time & intermittent processes: sludge removal	0.9	0.0000%	100.00%
38	A93	Other processes: closure of management unit or equipment other than by remediation in A6x	0.8	0.0000%	100.00%
39	A57	Production or service derived one-time & intermittent processes: discarding offspec material	0.3	0.0000%	100.00%
40	A58	Production or service derived one-time & intermittent processes: discarding out-of-date products	0.2	0.0000%	100.00%
Column total =			50,485,846.6	100.0000%	

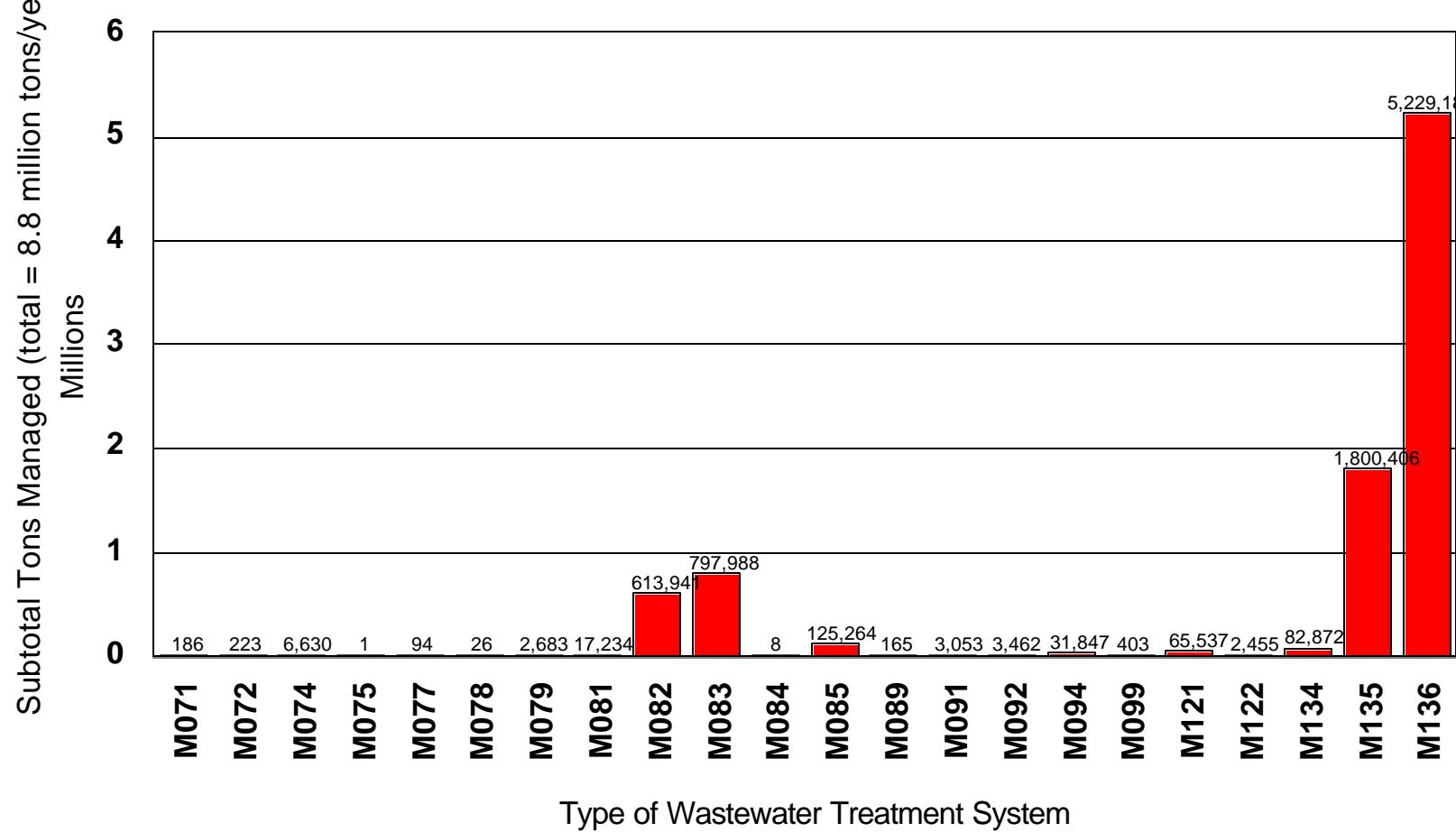
Wastewater Treatment Systems Used for F002 & F005 Spent Solvents
(Based on 383 wastewater wastestreams managed in 1997 BRS)



**Wastewater Treatment Systems Used for F002 & F005 Spent Solvents
(Based on 383 wastewater wastestreams managed in 1997 BRS)**



Wastewater Treatment Systems Used for F002 & F005 Spent Solvents
(Based on 382 wastewater wastestreams managed in 1997 BRS)



* 8.8 million tons subtotal based on 382 wastestreams, excluding 42.7 million tons associated with a single large wastestream managed at a single facility (TN)

Definition of Industrial Wastewater Management System Codes (BRS)

A. Aqueous Inorganic Waste Treatment Systems:

- M071 Chrome reduction followed by chemical precipitation
- M072 Cyanide destruction followed by chemical precipitation
- M073 Cyanide destruction only
- M074 Chemical oxidation followed by chemical precipitation
- M075 Chemical oxidation only
- M076 Wet air oxidation
- M077 Chemical precipitation
- M078 Other aqueous inorganic treatment (e.g. ion exchange, reverse osmosis)
- M079 Aqueous inorganic treatment – type unknown

B. Aqueous Organic Waste Treatment Systems:

- M081 Biological treatment
- M082 Carbon adsorption
- M083 Air/steam stripping
- M084 Wet air oxidation
- M085 Other aqueous organic treatment
- M089 Aqueous organic treatment – type unknown

C. Aqueous Organic & Inorganic Waste Treatment Systems:

- M091 Chemical precipitation in combination with biological treatment
- M092 Chemical precipitation in combination with carbon adsorption
- M093 Wet air oxidation
- M094 Other organic/inorganic treatment
- M099 Aqueous organic & inorganic treatment – type unknown

D. Other Waste Treatment Systems:

- M121 Neutralization only
- M122 Evaporation only
- M123 Settling/clarification only
- M124 Phase separation (e.g. emulsion breaking, filtration) only
- M125 Other treatment
- M129 Other treatment – type unknown

E. Waste Disposal Systems:

- M133 Surface impoundment
- M134 Deepwell/underground injection
- M135 Direct discharge to sewer/POTW
- M136 Direct discharge to surface water under NPDES

Industries Generating F002 & F005 Spent Solvent RCRA Hazardous Waste

(Source: 1997 BRS)

A. Alpha-Numeric Sort:													B. Descending Quantity Sort (annual tons):			
Item	SIC code	Industry description	Count of facilities	Count of waste streams	1997 Generated (tons)	Item %	Item	SIC code	Industry description	1997 Generated (tons)	Item %	Cumltv%				
1		Not reported	8	10	107,860.1	0.21%	1	2819	Industrial inorganic chemicals, nec	42,701,837.9	84.58%	84.6%				
2	0	Not reported	1	4	32,026.1	0.06%	2	2833	Medicinal chemicals & botanical products	3,054,277.2	6.05%	90.6%				
3	2079	Edible fats & oils	1	7	774,214.5	1.53%	3	3579	Office machines, nec	1,058,438.2	2.10%	92.7%				
4	2231	Broadwoven fabric mills, wool	1	1	14.8	0.00%	4	3861	Photographic equipment & supplies	936,380.2	1.85%	94.6%				
5	2522	Office furniture, except wood	1	1	0.9	0.00%	5	2079	Edible fats & oils	774,214.5	1.53%	96.1%				
6	2542	Partitions & fixtures, except wood	1	1	4,965.9	0.01%	6	3679	Electronic components, nec	562,216.7	1.11%	97.2%				
7	2611	Pulp mills	1	1	0.4	0.00%	7	2824	Man-made organic fibers, except cellulosic	479,656.5	0.95%	98.2%				
8	2672	Coated & laminated paper	2	2	37,557.0	0.07%	8	2834	Pharmaceutical preparations	309,756.1	0.61%	98.8%				
9	2812	Alkalies & chlorine	2	2	2,135.5	0.00%	9	3769	Missile & space vehicle equipment, nec	206,023.0	0.41%	99.2%				
10	2819	Industrial inorganic chemicals, nec	2	2	42,701,837.9	84.58%	10			107,860.1	0.21%	99.4%				
11	2821	Plastics materials & resins	3	4	944.3	0.00%	11	2869	Industrial organic chemicals, nec	100,712.8	0.20%	99.6%				
12	2824	Man-made organic fibers, except cellulosic	2	2	479,656.5	0.95%	12	2672	Coated & laminated paper	37,557.0	0.07%	99.7%				
13	2833	Medicinal chemicals & botanical products	6	8	3,054,277.2	6.05%	13	0		32,026.1	0.06%	99.75%				
14	2834	Pharmaceutical preparations	6	7	309,756.1	0.61%	14	3571	Electronic computers	27,442.8	0.05%	99.81%				
15	2835	In vitro & in vivo diagnostic substances	1	1	1.9	0.00%	15	7389	Business services, nec	22,674.3	0.04%	99.85%				
16	2841	Soap & other detergents, except specialty cleaning	1	1	230.4	0.00%	16	9711	National security	13,718.3	0.03%	99.88%				
17	2851	Paints & allied products	1	1	82.3	0.00%	17	3721	Aircraft	11,337.7	0.02%	99.90%				
18	2865	Cyclic organic crudes, intermediates, dyes & pigments	1	2	1,142.8	0.00%	18	9999	Nonclassifiable establishments	10,013.2	0.02%	99.92%				
19	2869	Industrial organic chemicals, nec	12	20	100,712.8	0.20%	19	4953	Refuse systems	9,518.8	0.02%	99.94%				
20	2891	Adhesives & sealants	1	2	20.6	0.00%	20	3764	Missile & space vehicle propulsion units & parts	6,511.2	0.01%	99.95%				
21	2899	Chemical preparations, nec	3	5	767.1	0.00%	21	2542	Partitions & fixtures, except wood	4,965.9	0.01%	99.96%				
22	2911	Petroleum refining	1	1	5.2	0.00%	22	3053	Gaskets, packing & sealing devices	3,207.0	0.01%	99.97%				
23	3053	Gaskets, packing & sealing	1	1	3,207.0	0.01%	23	3761	Guided missiles & space vehicles	3,048.2	0.01%	99.975%				

A. Alpha-Numeric Sort:							B. Descending Quantity Sort (annual tons):						
Item	SIC code	Industry description	Count of facilities	Count of waste streams	1997 Generated (tons)	Item %	Item	SIC code	Industry description	1997 Generated (tons)	Item %	Cumltv%	
		devices											
24	3069	Fabricated rubber products, nec	1	1	596.0	0.00%	24	2812	Alkalies & chlorine	2,135.5	0.00%	99.980%	
25	3081	Unsupported plastics film & sheet	1	2	591.3	0.00%	25	2865	Cyclic organic crudes, intermediates, dyes & pigments	1,142.8	0.00%	99.982%	
26	3089	Plastics products, nec	1	1	4.8	0.00%	26	4581	Airports, flying fields, & terminal services	994.4	0.00%	99.984%	
27	3341	Secondary smelting & refining of nonferrous metals	1	1	160.8	0.00%	27	2821	Plastics materials & resins	944.3	0.00%	99.986%	
28	3353	Aluminum sheet, plate, and foil	1	1	7.0	0.00%	28	3561	Pumps & pumping equipment	913.1	0.00%	99.987%	
29	3411	Metal cans	1	1	11.1	0.00%	29	8741	Management services	908.1	0.00%	99.989%	
30	3471	Plating & polishing	1	1	278.4	0.00%	30	5093	Scrap & waste materials	794.8	0.00%	99.991%	
31	3499	Fabricated metal products, nec	1	1	0.9	0.00%	31	2899	Chemical preparations, nec	767.1	0.00%	99.992%	
32	3561	Pumps & pumping equipment	1	1	913.1	0.00%	32	3728	Aircraft parts & equipment, nec	733.0	0.00%	99.994%	
33	3571	Electronic computers	1	1	27,442.8	0.05%	33	3069	Fabricated rubber products, nec	596.0	0.00%	99.9950%	
34	3577	Computer peripheral equipment	2	2	101.0	0.00%	34	3081	Unsupported plastics film & sheet	591.3	0.00%	99.9962%	
35	3579	Office machines, nec	2	8	1,058,438.2	2.10%	35	3829	Measuring & controlling devices, nec	324.4	0.00%	99.9968%	
36	3585	Refrigeration & heating equipment	1	1	4.2	0.00%	36	3471	Plating & polishing	278.4	0.00%	99.9974%	
37	3674	Semiconductors & related devices	1	1	38.5	0.00%	37	4226	Special warehousing & storage nec	241.7	0.00%	99.9978%	
38	3675	Electronic capacitors	1	1	0.5	0.00%	38	2841	Soap & other detergents, except specialty cleaning	230.4	0.00%	99.9983%	
39	3679	Electronic components, nec	4	6	562,216.7	1.11%	39	3695	Magnetic & optical recording media	196.2	0.00%	99.9987%	
40	3695	Magnetic & optical recording media	1	1	196.2	0.00%	40	3341	Secondary smelting & refining of nonferrous metals	160.8	0.00%	99.9990%	
41	3721	Aircraft	7	8	11,337.7	0.02%	41	3577	Computer peripheral equipment	101.0	0.00%	99.9992%	
42	3724	Aircraft engines & engine parts	4	4	12.0	0.00%	42	2851	Paints & allied products	82.3	0.00%	99.9994%	
43	3728	Aircraft parts & equipment, nec	4	4	733.0	0.00%	43	7216	Dry cleaning plants, except rug	59.6	0.00%	99.9995%	
44	3761	Guided missiles & space vehicles	1	1	3,048.2	0.01%	44	8999	Services, nec	52.1	0.00%	99.9996%	
45	3764	Missile & space vehicle propulsion units & parts	2	5	6,511.2	0.01%	45	3674	Semiconductors & related devices	38.5	0.00%	99.9997%	

A. Alpha-Numeric Sort:							B. Descending Quantity Sort (annual tons):						
Item	SIC code	Industry description	Count of facilities	Count of waste streams	1997 Generated (tons)	Item %	Item	SIC code	Industry description	1997 Generated (tons)	Item %	Cumltv%	
46	3769	Missile & space vehicle equipment, nec	1	1	206,023.0	0.41%	46	8734	Testing laboratories	29.5	0.00%	99.9997%	
47	3829	Measuring & controlling devices, nec	1	2	324.4	0.00%	47	2891	Adhesives & sealants	20.6	0.00%	99.9998%	
48	3861	Photographic equipment & supplies	7	70	936,380.2	1.85%	48	8731	Commercial physical & biological research	17.0	0.00%	99.9998%	
49	4226	Special warehousing & storage nec	1	1	241.7	0.00%	49	2231	Broadwoven fabric mills, wool	14.8	0.00%	99.9998%	
50	4581	Airports, flying fields, & terminal services	4	8	994.4	0.00%	50	3724	Aircraft engines & engine parts	12.0	0.00%	99.9999%	
51	4911	Electric services	1	1	11.9	0.00%	51	4911	Electric services	11.9	0.00%	99.9999%	
52	4953	Refuse systems	14	46	9,518.8	0.02%	52	9511	Air & water resource & solid waste management	11.6	0.00%	99.9999%	
53	5093	Scrap & waste materials	2	5	794.8	0.00%	53	3411	Metal cans	11.1	0.00%	99.9999%	
54	5162	Plastics materials & basic shapes	1	1	10.3	0.00%	54	5162	Plastics materials & basic shapes	10.3	0.00%	99.9999%	
55	5169	Chemicals & allied products, nec (wholesale trade)	1	1	0.3	0.00%	55	3353	Aluminum sheet, plate, and foil	7.0	0.00%	100.0000%	
56	5999	Miscellaneous retail stores, nec	1	1	0.2	0.00%	56	2911	Petroleum refining	5.2	0.00%	100.0000%	
57	7216	Dry cleaning plants, except rug	2	2	59.6	0.00%	57	3089	Plastics products, nec	4.8	0.00%	100.0000%	
58	7389	Business services, nec	8	17	22,674.3	0.04%	58	3585	Refrigeration & heating equipment	4.2	0.00%	100.0000%	
59	8099	Health & allied services, nec	1	2	2.3	0.00%	59	8099	Health & allied services, nec	2.3	0.00%	100.0000%	
60	8731	Commercial physical & biological research	1	1	17.0	0.00%	60	2835	In vitro & in vivo diagnostic substances	1.9	0.00%	100.0000%	
61	8734	Testing laboratories	2	2	29.5	0.00%	61	3499	Fabricated metal products, nec	0.9	0.00%	100.0000%	
62	8741	Management services	1	2	908.1	0.00%	62	2522	Office furniture, except wood	0.9	0.00%	100.0000%	
63	8999	Services, nec	1	1	52.1	0.00%	63	3675	Electronic capacitors	0.5	0.00%	100.0000%	
64	9511	Air & water resource & solid waste management	1	3	11.6	0.00%	64	2611	Pulp mills	0.4	0.00%	100.0000%	
65	9711	National security	3	10	13,718.3	0.03%	65	5169	Chemicals & allied products, nec (wholesale trade)	0.3	0.00%	100.0000%	
66	9999	Nonclassifiable establishments	4	28	10,013.2	0.02%	66	5999	Miscellaneous retail stores, nec	0.2	0.00%	100.0000%	
Column total =			157	344	50,485,846.6	100.00%				50,485,846.6	100.00%		
Economic sector subtotals:													
1	Manufacturing (20xx to 39xx)		99	198	50,286,902.1	99.61%							

A. Alpha-Numeric Sort:						B. Descending Quantity Sort (annual tons):						
Item	SIC code	Industry description	Count of facilities	Count of waste streams	1997 Generated (tons)	Item %	Item	SIC code	Industry description	1997 Generated (tons)	Item %	Cumltv%
2		Transportation & Utilities (40xx to 49xx)	20	56	10,766.8	0.02%						
3		Wholesale Trade (50xx to 51xx)	4	7	805.4	0.00%						
4		Retail Trade (52xx to 59xx)	1	1	0.2	0.00%						
5		Finance, Insurance & Real Estate (60xx to 67xx)	0	0	0	0%						
6		Services (70xx to 89xx)	16	27	23,742.8	0.05%						
7		Public Administration (91xx to 99xx)	4	13	13,729.9	0.03%						
8		Unknown (9999 and missing data)	13	42	149,899.4	0.30%						

States Generating F002 & F005 Spent Solvent RCRA Hazardous Waste
 (Source: 1997 BRS)

A. Alpha-Numeric Sort:										B. Descending Quantity Sort (annual tons):				
Item	State	Count of facilities	Count of waste streams	1997 Generated (tons)	Item %	Item	State	1997 Generated (tons)	Item %	Cumltv%				
1	AK	1	1	0.4	0.00%	1	TN	42,701,768.5	84.58%	84.6%				
2	AL	2	2	58.8	0.00%	2	NY	2,823,707.0	5.59%	90.2%				
3	AZ	1	2	908.1	0.00%	3	PA	2,487,121.1	4.93%	95.1%				
4	CA	7	9	6,396.1	0.01%	4	MA	1,034,782.0	2.05%	97.2%				
5	CO	2	2	1,100.9	0.00%	5	IN	569,834.5	1.13%	98.3%				
6	CT	13	21	1,373.1	0.00%	6	GA	307,643.7	0.61%	98.9%				
7	DE	1	1	17.1	0.00%	7	LA	207,386.1	0.41%	99.3%				
8	FL	6	13	21,777.6	0.04%	8	OR	101,314.1	0.20%	99.5%				
9	GA	8	9	307,643.7	0.61%	9	NC	64,221.0	0.13%	99.6%				
10	IL	4	31	5,448.0	0.01%	10	OK	45,561.7	0.09%	99.7%				
11	IN	4	29	569,834.5	1.13%	11	TX	40,014.4	0.08%	99.80%				
12	KS	2	4	133.0	0.00%	12	NJ	29,114.7	0.06%	99.85%				
13	KY	2	2	688.9	0.00%	13	FL	21,777.6	0.04%	99.90%				
14	LA	3	4	207,386.1	0.41%	14	WA	6,546.0	0.01%	99.91%				
15	MA	12	20	1,034,782.0	2.05%	15	CA	6,396.1	0.01%	99.92%				
16	MD	1	2	2.3	0.00%	16	OH	5,608.8	0.01%	99.93%				
17	ME	1	1	5.7	0.00%	17	VA	5,487.1	0.01%	99.95%				
18	MI	3	5	2,617.2	0.01%	18	IL	5,448.0	0.01%	99.956%				
19	MN	1	1	237.0	0.00%	19	UT	5,402.7	0.01%	99.967%				
20	MO	1	2	507.5	0.00%	20	NE	4,045.4	0.01%	99.975%				
21	MS	1	1	5.2	0.00%	21	WI	3,647.9	0.01%	99.982%				
22	NC	4	4	64,221.0	0.13%	22	MI	2,617.2	0.01%	99.987%				
23	NE	1	1	4,045.4	0.01%	23	CT	1,373.1	0.00%	99.990%				
24	NH	1	1	0.9	0.00%	24	CO	1,100.9	0.00%	99.992%				
25	NJ	4	8	29,114.7	0.06%	25	AZ	908.1	0.00%	99.994%				
26	NY	18	91	2,823,707.0	5.59%	26	KY	688.9	0.00%	99.995%				
27	OH	7	9	5,608.8	0.01%	27	RI	591.3	0.00%	99.996%				
28	OK	6	7	45,561.7	0.09%	28	MO	507.5	0.00%	99.9976%				
29	OR	3	3	101,314.1	0.20%	29	WV	476.2	0.00%	99.9985%				
30	PA	11	13	2,487,121.1	4.93%	30	PR	294.9	0.00%	99.9991%				
31	PR	1	1	294.9	0.00%	31	MN	237.0	0.00%	99.9996%				
32	RI	1	2	591.3	0.00%	32	KS	133.0	0.00%	99.9998%				
33	TN	2	2	42,701,768.5	84.58%	33	AL	58.8	0.00%	99.9999%				
34	TX	8	19	40,014.4	0.08%	34	DE	17.1	0.00%	100.0000%				
35	UT	2	4	5,402.7	0.01%	35	ME	5.7	0.00%	100.0000%				
36	VA	3	3	5,487.1	0.01%	36	MS	5.2	0.00%	100.0000%				
37	WA	5	7	6,546.0	0.01%	37	MD	2.3	0.00%	100.0000%				
38	WI	3	6	3,647.9	0.01%	38	NH	0.9	0.00%	100.0000%				
39	WV	1	1	476.2	0.00%	39	AK	0.4	0.00%	100.0000%				
Column total =		157	344	50,485,846.6	100.00%	Column total =		50,485,846.6	100.00%					

States Managing (Treating) F002 & F005 Spent Solvent RCRA Hazardous Waste (Source: 1997 BRS)										
A. Alpha-Numeric Sort:						B. Descending Quantity Sort (annual tons):				
Item	State	Count of facilities	Count of waste streams	1997 Managed (tons)	Item %	Item	State	1997 Managed (tons)	Item %	Cumltv%
1	AK	1	1	0.4	0.00%	1	TN	42,712,505.0	82.94%	82.9%
2	AL	4	4	350,593.2	0.68%	2	NY	2,881,045.4	5.59%	88.5%
3	AZ	1	2	908.1	0.00%	3	PA	2,709,787.7	5.26%	93.8%
4	CA	9	13	458,986.6	0.89%	4	IN	719,801.8	1.40%	95.2%
5	CO	5	5	38,577.2	0.07%	5	MA	699,161.5	1.36%	96.6%
6	CT	13	21	958.5	0.00%	6	CA	458,986.6	0.89%	97.4%
7	DE	1	1	17.1	0.00%	7	AL	350,593.2	0.68%	98.1%
8	FL	6	13	19,430.9	0.04%	8	GA	307,487.0	0.60%	98.7%
9	GA	8	9	307,487.0	0.60%	9	LA	207,330.1	0.40%	99.1%
10	IL	4	33	1,577.5	0.00%	10	NC	126,965.5	0.25%	99.4%
11	IN	4	30	719,801.8	1.40%	11	OR	101,314.1	0.20%	99.57%
12	KS	3	5	15,162.4	0.03%	12	OK	44,954.9	0.09%	99.66%
13	KY	2	2	688.9	0.00%	13	CO	38,577.2	0.07%	99.73%
14	LA	3	4	207,330.1	0.40%	14	NJ	25,853.4	0.05%	99.78%
15	MA	13	21	699,161.5	1.36%	15	VA	25,161.1	0.05%	99.83%
16	MD	1	2	1.9	0.00%	16	FL	19,430.9	0.04%	99.87%
17	ME	1	1	5.7	0.00%	17	MN	15,243.7	0.03%	99.90%
18	MI	3	5	1,273.0	0.00%	18	KS	15,162.4	0.03%	99.929%
19	MN	2	2	15,243.7	0.03%	19	TX	8,942.5	0.02%	99.946%
20	MO	1	2	96.9	0.00%	20	WA	6,545.5	0.01%	99.959%
21	MS	1	1	5.2	0.00%	21	UT	5,416.1	0.01%	99.969%
22	NC	4	4	126,965.5	0.25%	22	OH	4,097.8	0.01%	99.977%
23	NE	1	1	2,060.0	0.00%	23	WI	3,133.2	0.01%	99.983%
24	NH	1	1	0.9	0.00%	24	NE	2,060.0	0.00%	99.987%
25	NJ	4	8	25,853.4	0.05%	25	IL	1,577.5	0.00%	99.990%
26	NY	20	94	2,881,045.4	5.59%	26	MI	1,273.0	0.00%	99.993%
27	OH	9	23	4,097.8	0.01%	27	CT	958.5	0.00%	99.9946%
28	OK	6	7	44,954.9	0.09%	28	AZ	908.1	0.00%	99.9963%
29	OR	3	3	101,314.1	0.20%	29	KY	688.9	0.00%	99.9977%
30	PA	13	15	2,709,787.7	5.26%	30	WV	476.2	0.00%	99.9986%
31	PR	1	1	294.9	0.00%	31	RI	295.6	0.00%	99.9992%
32	RI	1	2	295.6	0.00%	32	PR	294.9	0.00%	99.9998%
33	TN	2	2	42,712,505.0	82.94%	33	MO	96.9	0.00%	99.9999%
34	TX	8	19	8,942.5	0.02%	34	DE	17.1	0.00%	100.0000%
35	UT	2	6	5,416.1	0.01%	35	ME	5.7	0.00%	100.0000%
36	VA	5	5	25,161.1	0.05%	36	MS	5.2	0.00%	100.0000%
37	WA	5	7	6,545.5	0.01%	37	MD	1.9	0.00%	100.0000%
38	WI	3	7	3,133.2	0.01%	38	NH	0.9	0.00%	100.0000%
39	WV	1	1	476.2	0.00%	39	AK	0.4	0.00%	100.0000%
Column total =		175	383	51,496,157.3	100.00%	Column total =		51,496,157.3	100.00%	

Facilities Generating F002 & F005 Spent Solvent RCRA Hazardous Waste (Source: 1997 BRS)								
A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
1	AKD009252230	0.4	0.0000%	1	TND003376928	42,701,759.2	84.582%	84.6%
2	ALD000622464	8.8	0.0000%	2	PAD003043353	2,485,320.0	4.923%	89.5%
3	ALD003297116			3	NYD002211324	1,052,966.2	2.086%	91.6%
4	ALD079109013			4	NYD003930849	774,214.5	1.534%	93.1%
5	ALD983176520	50.0	0.0001%	5	NYD059385120	562,192.7	1.114%	94.2%
6	AZD009015389	908.1	0.0018%	6	MAD001033190	453,765.4	0.899%	95.1%
7	CA1800090010			7	IND000806935	443,615.5	0.879%	96.0%
8	CA7170090016	1,594.6	0.0032%	8	MAD001402320	371,258.6	0.735%	96.8%
9	CAD000030494	4,156.8	0.0082%	9	NYD980592497	321,326.0	0.636%	97.4%
10	CAD000627273	7.8	0.0000%	10	GAD039046800	303,995.0	0.602%	98.0%
11	CAD008302903	562.6	0.0011%	11	LA4800014587	206,023.0	0.408%	98.4%
12	CAD049904766	7.8	0.0000%	12	MAD058060476	129,000.0	0.256%	98.7%
13	CAD093365435			13	IND006050967	124,053.0	0.246%	98.9%
14	CAD981375983	54.4	0.0001%	14	ORD009023466	101,311.9	0.201%	99.1%
15	CAD982437089	12.1	0.0000%	15	NYD002220804	65,290.8	0.129%	99.2%
16	COD000694869	1,000.6	0.0020%	16	MAD000846493	47,726.5	0.095%	99.3%
17	COD007068646			17	OKD079986568	37,695.6	0.075%	99.4%
18	COD076470525			18	NCD003217437	37,531.3	0.074%	99.5%
19	COD160887741	100.2	0.0002%	19	TXD077603371	32,026.1	0.063%	99.5%
20	COD980952097			20	MAD062163191	29,372.4	0.058%	99.6%
21	CT5000001107	11.6	0.0000%	21	NYD084006741	27,442.8	0.054%	99.6%
22	CTD000604488	119.4	0.0002%	22	NCD051330280	25,891.1	0.051%	99.7%
23	CTD000844332	9.0	0.0000%	23	NJD002385730	25,188.9	0.050%	99.75%
24	CTD000845198	11.9	0.0000%	24	FL6170024412	11,850.8	0.023%	99.77%
25	CTD001139617	20.6	0.0000%	25	NYD986954147	6,713.0	0.013%	99.79%
26	CTD001149277	0.2	0.0000%	26	FLD046771952	5,930.1	0.012%	99.80%
27	CTD001169010	12.5	0.0000%	27	OKD000632737	5,800.6	0.011%	99.81%
28	CTD001186212	0.5	0.0000%	28	NYD041292509	5,472.0	0.011%	99.82%
29	CTD001449784	227.3	0.0005%	29	VAD988170445	5,374.8	0.011%	99.83%
30	CTD001840974	324.4	0.0006%	30	NYD002100352	4,965.9	0.010%	99.84%
31	CTD055310759	78.7	0.0002%	31	WAR000008979	4,893.5	0.010%	99.85%
32	CTD064828726	284.0	0.0006%	32	OHD980681571	4,295.7	0.009%	99.86%
33	CTD980668198	272.9	0.0005%	33	CAD000030494	4,156.8	0.008%	99.87%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
34	DED053304770	17.1	0.0000%	34	ILD980613913	4,078.5	0.008%	99.87%
35	FL6170024412	11,850.8	0.0235%	35	NED981723513	4,045.4	0.008%	99.88%
36	FLD004073177	1,968.7	0.0039%	36	TXD052649027	3,987.9	0.008%	99.89%
37	FLD046771952	5,930.1	0.0117%	37	NJD056356066	3,810.8	0.008%	99.90%
38	FLD980729610	1,866.3	0.0037%	38	TXD981512122	3,207.0	0.006%	99.90%
39	FLD981474802	109.6	0.0002%	39	WID000808824	3,095.3	0.006%	99.91%
40	FLD982102295	52.1	0.0001%	40	UTD009081357	3,048.2	0.006%	99.92%
41	GAD003324985	1,149.0	0.0023%	41	UTD001705029	2,354.5	0.005%	99.92%
42	GAD033582461	362.2	0.0007%	42	NYD000824482	2,095.7	0.004%	99.93%
43	GAD039046800	303,995.0	0.6021%	43	FLD004073177	1,968.7	0.004%	99.93%
44	GAD051010429	230.4	0.0005%	44	GAD061022216	1,891.7	0.004%	99.93%
45	GAD061022216	1,891.7	0.0037%	45	FLD980729610	1,866.3	0.004%	99.94%
46	GAD980845077	0.3	0.0000%	46	IND000646943	1,737.1	0.003%	99.94%
47	GAD981224991	0.2	0.0000%	47	WA7890008967	1,650.4	0.003%	99.94%
48	GAR000012336	14.8	0.0000%	48	CA7170090016	1,594.6	0.003%	99.95%
49	ILD000608471	513.8	0.0010%	49	MID083684290	1,396.8	0.003%	99.949%
50	ILD005083316	851.5	0.0017%	50	LAD985218742	1,251.2	0.002%	99.952%
51	ILD005158274	4.2	0.0000%	51	MID000820381	1,219.5	0.002%	99.954%
52	ILD980613913	4,078.5	0.0081%	52	GAD003324985	1,149.0	0.002%	99.956%
53	IND000646943	1,737.1	0.0034%	53	MAR000007955	1,142.8	0.002%	99.959%
54	IND000806935	443,615.5	0.8787%	54	COD000694869	1,000.6	0.002%	99.961%
55	IND006050967	124,053.0	0.2457%	55	PAD030069140	968.4	0.002%	99.963%
56	IND085616837	428.9	0.0008%	56	OKD000758599	913.1	0.002%	99.964%
57	KSD007246846	111.3	0.0002%	57	AZD009015389	908.1	0.002%	99.966%
58	KSD007482011			58	OKD089761290	857.8	0.002%	99.968%
59	KSD980854285	21.8	0.0000%	59	ILD005083316	851.5	0.002%	99.970%
60	KYD000770313	108.7	0.0002%	60	OHD001926740	811.8	0.002%	99.971%
61	KYD053348108	580.2	0.0011%	61	NCD980842132	774.8	0.002%	99.973%
62	LA4800014587	206,023.0	0.4081%	62	NYD981561962	705.3	0.001%	99.974%
63	LAD000757286	112.0	0.0002%	63	MAD000604447	683.5	0.001%	99.976%
64	LAD985218742	1,251.2	0.0025%	64	MAD000844597	642.6	0.001%	99.977%
65	MAD000604447	683.5	0.0014%	65	TXD981898760	596.0	0.001%	99.978%
66	MAD000844597	642.6	0.0013%	66	RID058065707	591.3	0.001%	99.979%
67	MAD000846493	47,726.5	0.0945%	67	MAD980912323	582.1	0.001%	99.980%
68	MAD001033190	453,765.4	0.8988%	68	KYD053348108	580.2	0.001%	99.981%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
69	MAD001402320	371,258.6	0.7354%	69	CAD008302903	562.6	0.001%	99.983%
70	MAD001923408			70	WID990829475	547.7	0.001%	99.984%
71	MAD019371079	170.2	0.0003%	71	ILD000608471	513.8	0.001%	99.985%
72	MAD053452637	241.7	0.0005%	72	MOD071987416	507.5	0.001%	99.986%
73	MAD058060476	129,000.0	0.2555%	73	WVD988776852	476.2	0.001%	99.987%
74	MAD062163191	29,372.4	0.0582%	74	IND085616837	428.9	0.001%	99.987%
75	MAD980912323	582.1	0.0012%	75	GAD033582461	362.2	0.001%	99.988%
76	MAR000007559	196.2	0.0004%	76	CTD001840974	324.4	0.001%	99.989%
77	MAR000007955	1,142.8	0.0023%	77	PRD090036021	294.9	0.001%	99.989%
78	MD6150004095	2.3	0.0000%	78	PAD067098822	287.5	0.001%	99.990%
79	MED985467935	5.7	0.0000%	79	CTD064828726	284.0	0.001%	99.991%
80	MID000820381	1,219.5	0.0024%	80	OHD004182408	278.4	0.001%	99.991%
81	MID083684290	1,396.8	0.0028%	81	OKD981909849	275.9	0.001%	99.992%
82	MID980683775	0.9	0.0000%	82	CTD980668198	272.9	0.001%	99.992%
83	MND000819268			83	MAD053452637	241.7	0.000%	99.993%
84	MND985694736	237.0	0.0005%	84	NYD002081396	238.9	0.000%	99.993%
85	MOD071987416	507.5	0.0010%	85	MND985694736	237.0	0.000%	99.994%
86	MSD054179403	5.2	0.0000%	86	GAD051010429	230.4	0.000%	99.994%
87	NCD003217437	37,531.3	0.0743%	87	CTD001449784	227.3	0.000%	99.995%
88	NCD051330280	25,891.1	0.0513%	88	PAD980551964	196.9	0.000%	99.995%
89	NCD980842132	774.8	0.0015%	89	MAR000007559	196.2	0.000%	99.995%
90	NCD986177061	23.8	0.0000%	90	MAD019371079	170.2	0.000%	99.9956%
91	NED981723513	4,045.4	0.0080%	91	PAD067362327	160.8	0.000%	99.9959%
92	NHD500015441	0.9	0.0000%	92	OHD004172565	160.1	0.000%	99.9963%
93	NJD002147023	98.0	0.0002%	93	CTD000604488	119.4	0.000%	99.9965%
94	NJD002385730	25,188.9	0.0499%	94	LAD000757286	112.0	0.000%	99.9967%
95	NJD006980924	17.0	0.0000%	95	KSD007246846	111.3	0.000%	99.9969%
96	NJD056356066	3,810.8	0.0075%	96	TXD056542749	110.7	0.000%	99.9972%
97	NY0000926436	1.9	0.0000%	97	FLD981474802	109.6	0.000%	99.9974%
98	NYD000098558	5.1	0.0000%	98	KYD000770313	108.7	0.000%	99.9976%
99	NYD000707901	38.5	0.0001%	99	COD160887741	100.2	0.000%	99.9978%
100	NYD000809350	11.1	0.0000%	100	NJD002147023	98.0	0.000%	99.9980%
101	NYD000824482	2,095.7	0.0042%	101	VAD982362428	93.2	0.000%	99.9982%
102	NYD002067932	25.7	0.0001%	102	PAD002311884	82.3	0.000%	99.9983%
103	NYD002081396	238.9	0.0005%	103	CTD055310759	78.7	0.000%	99.9985%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
104	NYD002100352	4,965.9	0.0098%	104	TXD058276130	75.7	0.000%	99.9986%
105	NYD002211324	1,052,966.2	2.0857%	105	OHD066060609	56.8	0.000%	99.9987%
106	NYD002220804	65,290.8	0.1293%	106	CAD981375983	54.4	0.000%	99.9988%
107	NYD003930849	774,214.5	1.5335%	107	FLD982102295	52.1	0.000%	99.9990%
108	NYD041292509	5,472.0	0.0108%	108	ALD983176520	50.0	0.000%	99.9991%
109	NYD053719894	0.8	0.0000%	109	PAD980550412	41.7	0.000%	99.9991%
110	NYD059385120	562,192.7	1.1136%	110	PAD987271848	39.7	0.000%	99.9992%
111	NYD080480734			111	NYD000707901	38.5	0.000%	99.9993%
112	NYD084006741	27,442.8	0.0544%	112	NYD002067932	25.7	0.000%	99.9993%
113	NYD980592497	321,326.0	0.6365%	113	NCD986177061	23.8	0.000%	99.9994%
114	NYD981561962	705.3	0.0014%	114	KSD980854285	21.8	0.000%	99.9994%
115	NYD986954147	6,713.0	0.0133%	115	CTD001139617	20.6	0.000%	99.9995%
116	NYR000030726			116	VAR000004978	19.1	0.000%	99.9995%
117	OHD000816629			117	OKD987083946	18.8	0.000%	99.9995%
118	OHD001926740	811.8	0.0016%	118	DED053304770	17.1	0.000%	99.9996%
119	OHD004172565	160.1	0.0003%	119	NJD006980924	17.0	0.000%	99.9996%
120	OHD004182408	278.4	0.0006%	120	PAD004498432	15.6	0.000%	99.9996%
121	OHD005046677	2.0	0.0000%	121	GAR000012336	14.8	0.000%	99.9997%
122	OHD052324290	4.2	0.0000%	122	CTD001169010	12.5	0.000%	99.9997%
123	OHD066060609	56.8	0.0001%	123	CAD982437089	12.1	0.000%	99.9997%
124	OHD093945293			124	CTD000845198	11.9	0.000%	99.9997%
125	OHD980681571	4,295.7	0.0085%	125	CT5000001107	11.6	0.000%	99.9998%
126	OKD000632737	5,800.6	0.0115%	126	NYD000809350	11.1	0.000%	99.9998%
127	OKD000758599	913.1	0.0018%	127	TXD062128004	10.3	0.000%	99.9998%
128	OKD079986568	37,695.6	0.0747%	128	TND982109142	9.2	0.000%	99.9998%
129	OKD089761290	857.8	0.0017%	129	CTD000844332	9.0	0.000%	99.9998%
130	OKD981909849	275.9	0.0005%	130	ALD000622464	8.8	0.000%	99.9999%
131	OKD987083946	18.8	0.0000%	131	CAD049904766	7.8	0.000%	99.9999%
132	ORD009023466	101,311.9	0.2007%	132	CAD000627273	7.8	0.000%	99.9999%
133	ORD009227398	0.3	0.0000%	133	PAD001887579	7.0	0.000%	99.9999%
134	ORD099149445	1.9	0.0000%	134	MED985467935	5.7	0.000%	99.9999%
135	PAD001887579	7.0	0.0000%	135	MSD054179403	5.2	0.000%	99.9999%
136	PAD002311884	82.3	0.0002%	136	NYD000098558	5.1	0.000%	99.9999%
137	PAD003038056	1.2	0.0000%	137	WID068318146	4.8	0.000%	100.0000%
138	PAD003043353	2,485,320.0	4.9228%	138	ILD005158274	4.2	0.000%	100.0000%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
139	PAD004498432	15.6	0.0000%	139	OHD052324290	4.2	0.000%	100.0000%
140	PAD030069140	968.4	0.0019%	140	MD6150004095	2.3	0.000%	100.0000%
141	PAD041399403			141	OHD005046677	2.0	0.000%	100.0000%
142	PAD043882323			142	ORD099149445	1.9	0.000%	100.0000%
143	PAD067098822	287.5	0.0006%	143	NY0000926436	1.9	0.000%	100.0000%
144	PAD067362327	160.8	0.0003%	144	PAD003038056	1.2	0.000%	100.0000%
145	PAD980550412	41.7	0.0001%	145	WAD009249863	0.9	0.000%	100.0000%
146	PAD980551964	196.9	0.0004%	146	WAD988478723	0.9	0.000%	100.0000%
147	PAD987271848	39.7	0.0001%	147	NHD500015441	0.9	0.000%	100.0000%
148	PRD090036021	294.9	0.0006%	148	MID980683775	0.9	0.000%	100.0000%
149	RID058065707	591.3	0.0012%	149	NYD053719894	0.8	0.000%	100.0000%
150	TND003376928	42,701,759.2	84.5816%	150	TXD050858182	0.7	0.000%	100.0000%
151	TND982109142	9.2	0.0000%	151	CTD001186212	0.5	0.000%	100.0000%
152	TXD050858182	0.7	0.0000%	152	AKD009252230	0.4	0.000%	100.0000%
153	TXD052649027	3,987.9	0.0079%	153	ORD009227398	0.3	0.000%	100.0000%
154	TXD056542749	110.7	0.0002%	154	GAD980845077	0.3	0.000%	100.0000%
155	TXD058276130	75.7	0.0001%	155	CTD001149277	0.2	0.000%	100.0000%
156	TXD062128004	10.3	0.0000%	156	GAD981224991	0.2	0.000%	100.0000%
157	TXD077603371	32,026.1	0.0634%	157	WA0000189431	0.2	0.000%	100.0000%
158	TXD981512122	3,207.0	0.0064%	158	ALD003297116			100.0000%
159	TXD981898760	596.0	0.0012%	159	ALD079109013			100.0000%
160	UTD001705029	2,354.5	0.0047%	160	CA1800090010			100.0000%
161	UTD009081357	3,048.2	0.0060%	161	CAD093365435			100.0000%
162	VAD023741705			162	COD007068646			100.0000%
163	VAD980831176			163	COD076470525			100.0000%
164	VAD982362428	93.2	0.0002%	164	COD980952097			100.0000%
165	VAD988170445	5,374.8	0.0106%	165	KSD007482011			100.0000%
166	VAR000004978	19.1	0.0000%	166	MAD001923408			100.0000%
167	WA0000189431	0.2	0.0000%	167	MND000819268			100.0000%
168	WA7890008967	1,650.4	0.0033%	168	NYD080480734			100.0000%
169	WAD009249863	0.9	0.0000%	169	NYR000030726			100.0000%
170	WAD988478723	0.9	0.0000%	170	OHD000816629			100.0000%
171	WAR000008979	4,893.5	0.0097%	171	OHD093945293			100.0000%
172	WID000808824	3,095.3	0.0061%	172	PAD041399403			100.0000%
173	WID068318146	4.8	0.0000%	173	PAD043882323			100.0000%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):				
Item	Facility EPAID	1997 Generated (tons)	Item %	Item	Facility EPAID	1997 Generated (tons)	Item %	Cumltv%
174	WID990829475	547.7	0.0011%	174	VAD023741705			100.0000%
175	WVD988776852	476.2	0.0009%	175	VAD980831176			100.0000%
Column totals =		50,485,846.6	100.0000%	Column totals =		50,485,846.6	100.0000%	

Facilities Managing Aqueous F002 & F005 Spent Solvent RCRA Hazardous Waste in Wastewater Treatment Units 1997 BRS Data Query: [F002 or F005] + [B101 or B201] + [M071 to M099 or M121 to M123 or M133 to M136]										
A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):						
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile	
1	AKD009252230	0.4	0.0000%	1	TND003376928	42,712,495.8	82.9%	100.0%	100.0%	
2	ALD000622464	0.5	0.0000%	2	PAD003043353	2,485,320.0	4.8%	17.1%	99.4%	
3	ALD003297116	6,838.5	0.0133%	3	NYD003930849	774,214.5	1.5%	12.2%	99%	
4	ALD079109013	343,704.2	0.6674%	4	NYR000030726	583,819.8	1.1%	10.7%	98.3%	
5	ALD983176520	50.0	0.0001%	5	NYD059385120	562,192.7	1.1%	9.6%	97.7%	
6	AZD009015389	908.1	0.0018%	6	NYD002211324	526,483.3	1.0%	8.5%	97.1%	
7	CA1800090010	157,762.7	0.3064%	7	IND000806935	443,615.5	0.9%	7.5%	96.6%	
8	CA7170090016	1,594.6	0.0031%	8	MAD001402320	371,258.3	0.7%	6.6%	96.0%	
9	CAD000030494	3,652.4	0.0071%	9	ALD079109013	343,704.2	0.7%	5.9%	95.4%	
10	CAD000627273	7.8	0.0000%	10	NYD980592497	321,324.0	0.6%	5.2%	95%	
11	CAD008302903	562.6	0.0011%	11	GAD039046800	303,995.0	0.6%	4.6%	94.3%	
12	CAD049904766	6.7	0.0000%	12	CAD093365435	295,333.2	0.6%	4.0%	93.7%	
13	CAD093365435	295,333.2	0.5735%	13	IND006050967	274,234.7	0.5%	3.4%	93.1%	
14	CAD981375983	54.4	0.0001%	14	PAD043882323	208,333.2	0.4%	2.9%	92.6%	
15	CAD982437089	12.1	0.0000%	15	LA4800014587	206,023.0	0.4%	2.5%	92.0%	
16	COD000694869	1,000.6	0.0019%	16	CA1800090010	157,762.7	0.3%	2.1%	91.4%	
17	COD007068646	3,380.9	0.0066%	17	MAD058060476	129,000.0	0.3%	1.8%	90.9%	
18	COD076470525	31,097.0	0.0604%	18	ORD009023466	101,311.9	0.2%	1.5%	90%	
19	COD160887741	100.2	0.0002%	19	NCD003217437	75,062.6	0.1%	1.4%	89.7%	
20	COD980952097	2,998.3	0.0058%	20	MAD001923408	74,854.0	0.1%	1.2%	89.1%	
21	CT5000001107	3.9	0.0000%	21	NYD002220804	65,290.8	0.1%	1.1%	88.6%	
22	CTD000604488	99.6	0.0002%	22	NCD051330280	51,782.2	0.1%	0.9%	88.0%	
23	CTD000844332	9.0	0.0000%	23	MAD000846493	47,726.5	0.09%	0.8%	87.4%	
24	CTD000845198	11.9	0.0000%	24	MAD001033190	45,376.5	0.09%	0.7%	86.9%	
25	CTD001139617	10.3	0.0000%	25	OKD079986568	37,695.6	0.07%	0.7%	86.3%	
26	CTD001149277	0.2	0.0000%	26	COD076470525	31,097.0	0.06%	0.6%	85.7%	
27	CTD001169010	0.1	0.0000%	27	MAD062163191	29,372.4	0.06%	0.5%	85.1%	
28	CTD001186212	0.5	0.0000%	28	NYD084006741	27,442.8	0.05%	0.5%	84.6%	
29	CTD001449784	220.5	0.0004%	29	NJD002385730	25,188.9	0.05%	0.4%	84.0%	
30	CTD001840974	162.2	0.0003%	30	VAD023741705	19,650.0	0.04%	0.4%	83.4%	
31	CTD055310759	78.7	0.0002%	31	KSD007482011	15,072.2	0.03%	0.3%	82.9%	
32	CTD064828726	284.0	0.0006%	32	MND000819268	15,006.7	0.03%	0.3%	82.3%	
33	CTD980668198	77.6	0.0002%	33	PAD041399403	14,553.8	0.03%	0.3%	81.7%	

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):					
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile
34	DED053304770	17.1	0.0000%	34	FL6170024412	11,451.1	0.02%	0.2%	81.1%
35	FL6170024412	11,451.1	0.0222%	35	ALD003297116	6,838.5	0.01%	0.2%	80.6%
36	FLD004073177	1,968.7	0.0038%	36	NYD986954147	6,713.0	0.01%	0.2%	80.0%
37	FLD046771952	5,930.1	0.0115%	37	FLD046771952	5,930.1	0.01%	0.2%	79.4%
38	FLD980729610	24.8	0.0000%	38	OKD000632737	5,800.6	0.01%	0.2%	78.9%
39	FLD981474802	4.1	0.0000%	39	NYD041292509	5,472.0	0.01%	0.2%	78.3%
40	FLD982102295	52.1	0.0001%	40	VAD988170445	5,374.8	0.01%	0.2%	77.7%
41	GAD003324985	1,149.0	0.0022%	41	NYD002100352	4,965.9	0.01%	0.1%	77.1%
42	GAD033582461	362.2	0.0007%	42	WAR000008979	4,893.5	0.01%	0.1%	76.6%
43	GAD039046800	303,995.0	0.5903%	43	TXD077603371	4,217.3	0.008%	0.1%	76.0%
44	GAD051010429	73.7	0.0001%	44	CAD000030494	3,652.4	0.007%	0.1%	75.4%
45	GAD061022216	1,891.7	0.0037%	45	COD007068646	3,380.9	0.007%	0.1%	74.9%
46	GAD980845077	0.3	0.0000%	46	TXD981512122	3,175.7	0.006%	0.1%	74.3%
47	GAD981224991	0.2	0.0000%	47	UTD009081357	3,048.2	0.006%	0.1%	73.7%
48	GAR000012336	14.8	0.0000%	48	COD980952097	2,998.3	0.006%	0.1%	73.1%
49	ILD000608471	497.4	0.0010%	49	UTD001705029	2,367.9	0.005%	0.1%	72.6%
50	ILD005083316	425.7	0.0008%	50	NYD000824482	2,095.7	0.004%	0.1%	72.0%
51	ILD005158274	0.8	0.0000%	51	NED981723513	2,060.0	0.004%	0.1%	71.4%
52	ILD980613913	653.6	0.0013%	52	FLD004073177	1,968.7	0.004%	0.1%	70.9%
53	IND000646943	1,737.1	0.0034%	53	GAD061022216	1,891.7	0.004%	0.1%	70.3%
54	IND000806935	443,615.5	0.8615%	54	IND000646943	1,737.1	0.003%	0.1%	69.7%
55	IND006050967	274,234.7	0.5325%	55	WID000808824	1,703.0	0.003%	0.1%	69.1%
56	IND085616837	214.5	0.0004%	56	OHD093945293	1,699.4	0.003%	0.1%	68.6%
57	KSD007246846	68.4	0.0001%	57	WA7890008967	1,650.4	0.003%	0.1%	68.0%
58	KSD007482011	15,072.2	0.0293%	58	CA7170090016	1,594.6	0.003%	0.0%	67.4%
59	KSD980854285	21.8	0.0000%	59	WID990829475	1,425.4	0.003%	0.0%	66.9%
60	KYD000770313	108.7	0.0002%	60	LAD985218742	1,251.2	0.002%	0.0%	66.3%
61	KYD053348108	580.2	0.0011%	61	MID000820381	1,205.8	0.002%	0.0%	65.7%
62	LA4800014587	206,023.0	0.4001%	62	GAD003324985	1,149.0	0.002%	0.0%	65.1%
63	LAD000757286	56.0	0.0001%	63	COD000694869	1,000.6	0.002%	0.0%	64.6%
64	LAD985218742	1,251.2	0.0024%	64	PAD030069140	968.4	0.002%	0.0%	64.0%
65	MAD000604447	136.0	0.0003%	65	OKD000758599	913.1	0.002%	0.0%	63.4%
66	MAD000844597	426.2	0.0008%	66	AZD009015389	908.1	0.002%	0.0%	62.9%
67	MAD000846493	47,726.5	0.0927%	67	OHD980681571	897.2	0.002%	0.0%	62.3%
68	MAD001033190	45,376.5	0.0881%	68	TXD052649027	789.2	0.002%	0.0%	61.7%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):					
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile
69	MAD001402320	371,258.3	0.7209%	69	NYD981561962	705.3	0.001%	0.0%	61.1%
70	MAD001923408	74,854.0	0.1454%	70	ILD980613913	653.6	0.001%	0.0%	60.6%
71	MAD019371079	114.0	0.0002%	71	OHD001926740	589.9	0.001%	0.0%	60.0%
72	MAD053452637	27.1	0.0001%	72	KYD053348108	580.2	0.001%	0.0%	59.4%
73	MAD058060476	129,000.0	0.2505%	73	CAD008302903	562.6	0.001%	0.0%	58.9%
74	MAD062163191	29,372.4	0.0570%	74	MAD980912323	560.2	0.001%	0.0%	58.3%
75	MAD980912323	560.2	0.0011%	75	NJD056356066	549.6	0.001%	0.0%	57.7%
76	MAR000007559	30.6	0.0001%	76	TXD981898760	499.0	0.001%	0.0%	57.1%
77	MAR000007955	279.6	0.0005%	77	ILD000608471	497.4	0.001%	0.0%	56.6%
78	MD6150004095	1.9	0.0000%	78	WVD988776852	476.2	0.001%	0.0%	56.0%
79	MED985467935	5.7	0.0000%	79	MAD000844597	426.2	0.001%	0.0%	55.4%
80	MID000820381	1,205.8	0.0023%	80	ILD005083316	425.7	0.001%	0.0%	54.9%
81	MID083684290	67.0	0.0001%	81	OHD066060609	397.7	0.001%	0.0%	54.3%
82	MID980683775	0.2	0.0000%	82	GAD033582461	362.2	0.001%	0.0%	53.7%
83	MND000819268	15,006.7	0.0291%	83	RID058065707	295.6	0.001%	0.0%	53.1%
84	MND985694736	237.0	0.0005%	84	PRD090036021	294.9	0.001%	0.0%	52.6%
85	MOD071987416	96.9	0.0002%	85	CTD064828726	284.0	0.001%	0.0%	52.0%
86	MSD054179403	5.2	0.0000%	86	MAR000007955	279.6	0.001%	0.0%	51.4%
87	NCD003217437	75,062.6	0.1458%	87	OHD004182408	278.4	0.001%	0.0%	50.9%
88	NCD051330280	51,782.2	0.1006%	88	OKD981909849	275.9	0.001%	0.0%	50%
89	NCD980842132	106.3	0.0002%	89	OKD089761290	251.0	0.000%	0.0%	49.7%
90	NCD986177061	14.4	0.0000%	90	NYD002081396	238.9	0.000%	0.0%	49.1%
91	NED981723513	2,060.0	0.0040%	91	MND985694736	237.0	0.000%	0.0%	48.6%
92	NHD500015441	0.9	0.0000%	92	CTD001449784	220.5	0.000%	0.0%	48.0%
93	NJD002147023	98.0	0.0002%	93	IND085616837	214.5	0.000%	0.0%	47.4%
94	NJD002385730	25,188.9	0.0489%	94	PAD980551964	183.1	0.000%	0.0%	46.9%
95	NJD006980924	17.0	0.0000%	95	OHD004172565	182.7	0.000%	0.0%	46.3%
96	NJD056356066	549.6	0.0011%	96	TXD056542749	174.3	0.000%	0.0%	45.7%
97	NY0000926436	1.9	0.0000%	97	CTD001840974	162.2	0.000%	0.0%	45.1%
98	NYD000098558	5.1	0.0000%	98	PAD067362327	160.8	0.000%	0.0%	44.6%
99	NYD000707901	38.5	0.0001%	99	MAD000604447	136.0	0.000%	0.0%	44.0%
100	NYD000809350	11.1	0.0000%	100	PAD067098822	121.5	0.000%	0.0%	43.4%
101	NYD000824482	2,095.7	0.0041%	101	MAD019371079	114.0	0.000%	0.0%	42.9%
102	NYD002067932	25.7	0.0000%	102	KYD000770313	108.7	0.000%	0.0%	42.3%
103	NYD002081396	238.9	0.0005%	103	NCD980842132	106.3	0.000%	0.0%	41.7%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):					
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile
104	NYD002100352	4,965.9	0.0096%	104	COD160887741	100.2	0.000%	0.0%	41.1%
105	NYD002211324	526,483.3	1.0224%	105	CTD000604488	99.6	0.000%	0.0%	40.6%
106	NYD002220804	65,290.8	0.1268%	106	NJD002147023	98.0	0.000%	0.0%	40.0%
107	NYD003930849	774,214.5	1.5034%	107	MOD071987416	96.9	0.000%	0.0%	39.4%
108	NYD041292509	5,472.0	0.0106%	108	VAD982362428	93.2	0.000%	0.0%	38.9%
109	NYD053719894	0.8	0.0000%	109	PAD002311884	82.3	0.000%	0.0%	38.3%
110	NYD059385120	562,192.7	1.0917%	110	CTD055310759	78.7	0.000%	0.0%	37.7%
111	NYD080480734	3.5	0.0000%	111	CTD980668198	77.6	0.000%	0.0%	37.1%
112	NYD084006741	27,442.8	0.0533%	112	TXD058276130	75.7	0.000%	0.0%	36.6%
113	NYD980592497	321,324.0	0.6240%	113	GAD051010429	73.7	0.000%	0.0%	36.0%
114	NYD981561962	705.3	0.0014%	114	KSD007246846	68.4	0.000%	0.0%	35.4%
115	NYD986954147	6,713.0	0.0130%	115	MID083684290	67.0	0.000%	0.0%	34.9%
116	NYR000030726	583,819.8	1.1337%	116	LAD000757286	56.0	0.000%	0.0%	34.3%
117	OHD000816629	46.4	0.0001%	117	CAD981375983	54.4	0.000%	0.0%	33.7%
118	OHD001926740	589.9	0.0011%	118	FLD982102295	52.1	0.000%	0.0%	33.1%
119	OHD004172565	182.7	0.0004%	119	ALD983176520	50.0	0.000%	0.0%	32.6%
120	OHD004182408	278.4	0.0005%	120	OHD000816629	46.4	0.000%	0.0%	32.0%
121	OHD005046677	2.0	0.0000%	121	PAD980550412	41.7	0.000%	0.0%	31.4%
122	OHD052324290	4.2	0.0000%	122	NYD000707901	38.5	0.000%	0.0%	30.9%
123	OHD066060609	397.7	0.0008%	123	MAR000007559	30.6	0.000%	0.0%	30.3%
124	OHD093945293	1,699.4	0.0033%	124	MAD053452637	27.1	0.000%	0.0%	29.7%
125	OHD980681571	897.2	0.0017%	125	NYD002067932	25.7	0.000%	0.0%	29.1%
126	OKD000632737	5,800.6	0.0113%	126	FLD980729610	24.8	0.000%	0.0%	28.6%
127	OKD000758599	913.1	0.0018%	127	VAD980831176	24.0	0.000%	0.0%	28.0%
128	OKD079986568	37,695.6	0.0732%	128	KSD980854285	21.8	0.000%	0.0%	27.4%
129	OKD089761290	251.0	0.0005%	129	VAR000004978	19.1	0.000%	0.0%	26.9%
130	OKD981909849	275.9	0.0005%	130	OKD987083946	18.8	0.000%	0.0%	26.3%
131	OKD987083946	18.8	0.0000%	131	DED053304770	17.1	0.000%	0.0%	25.7%
132	ORD009023466	101,311.9	0.1967%	132	NJD006980924	17.0	0.000%	0.0%	25.1%
133	ORD009227398	0.3	0.0000%	133	PAD004498432	15.6	0.000%	0.0%	24.6%
134	ORD099149445	1.9	0.0000%	134	GAR000012336	14.8	0.000%	0.0%	24.0%
135	PAD001887579	6.7	0.0000%	135	NCD986177061	14.4	0.000%	0.0%	23.4%
136	PAD002311884	82.3	0.0002%	136	CAD982437089	12.1	0.000%	0.0%	22.9%
137	PAD003038056	0.3	0.0000%	137	CTD000845198	11.9	0.000%	0.0%	22.3%
138	PAD003043353	2,485,320.0	4.8262%	138	NYD000809350	11.1	0.000%	0.0%	21.7%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):					
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile
139	PAD004498432	15.6	0.0000%	139	TXD062128004	10.3	0.000%	0.0%	21.1%
140	PAD030069140	968.4	0.0019%	140	CTD001139617	10.3	0.000%	0.0%	20.6%
141	PAD041399403	14,553.8	0.0283%	141	TND982109142	9.2	0.000%	0.0%	20.0%
142	PAD043882323	208,333.2	0.4046%	142	CTD000844332	9.0	0.000%	0.0%	19.4%
143	PAD067098822	121.5	0.0002%	143	CAD000627273	7.8	0.000%	0.0%	18.9%
144	PAD067362327	160.8	0.0003%	144	PAD001887579	6.7	0.000%	0.0%	18.3%
145	PAD980550412	41.7	0.0001%	145	CAD049904766	6.7	0.000%	0.0%	17.7%
146	PAD980551964	183.1	0.0004%	146	MED985467935	5.7	0.000%	0.0%	17.1%
147	PAD987271848	0.2	0.0000%	147	MSD054179403	5.2	0.000%	0.0%	16.6%
148	PRD090036021	294.9	0.0006%	148	NYD000098558	5.1	0.000%	0.0%	16.0%
149	RID058065707	295.6	0.0006%	149	WID068318146	4.8	0.000%	0.0%	15.4%
150	TND003376928	42,712,495.8	82.9431%	150	OHD052324290	4.2	0.000%	0.0%	14.9%
151	TND982109142	9.2	0.0000%	151	FLD981474802	4.1	0.000%	0.0%	14.3%
152	TXD050858182	1.0	0.0000%	152	CT5000001107	3.9	0.000%	0.0%	13.7%
153	TXD052649027	789.2	0.0015%	153	NYD080480734	3.5	0.000%	0.0%	13.1%
154	TXD056542749	174.3	0.0003%	154	OHD005046677	2.0	0.000%	0.0%	12.6%
155	TXD058276130	75.7	0.0001%	155	MD6150004095	1.9	0.000%	0.0%	12.0%
156	TXD062128004	10.3	0.0000%	156	ORD099149445	1.9	0.000%	0.0%	11.4%
157	TXD077603371	4,217.3	0.0082%	157	NY0000926436	1.9	0.000%	0.0%	10.9%
158	TXD981512122	3,175.7	0.0062%	158	TXD050858182	1.0	0.000%	0.0%	10.3%
159	TXD981898760	499.0	0.0010%	159	WAD988478723	0.9	0.000%	0.0%	9.7%
160	UTD001705029	2,367.9	0.0046%	160	NHD500015441	0.9	0.000%	0.0%	9.1%
161	UTD009081357	3,048.2	0.0059%	161	NYD053719894	0.8	0.000%	0.0%	8.6%
162	VAD023741705	19,650.0	0.0382%	162	ILD005158274	0.8	0.000%	0.0%	8.0%
163	VAD980831176	24.0	0.0000%	163	WAD009249863	0.5	0.000%	0.0%	7.4%
164	VAD982362428	93.2	0.0002%	164	CTD001186212	0.5	0.000%	0.0%	6.9%
165	VAD988170445	5,374.8	0.0104%	165	ALD000622464	0.5	0.000%	0.0%	6.3%
166	VAR000004978	19.1	0.0000%	166	AKD009252230	0.4	0.000%	0.0%	5.7%
167	WA0000189431	0.2	0.0000%	167	ORD009227398	0.3	0.000%	0.0%	5.1%
168	WA7890008967	1,650.4	0.0032%	168	GAD980845077	0.3	0.000%	0.0%	4.6%
169	WAD009249863	0.5	0.0000%	169	PAD003038056	0.3	0.000%	0.0%	4.0%
170	WAD988478723	0.9	0.0000%	170	CTD001149277	0.2	0.000%	0.0%	3.4%
171	WAR000008979	4,893.5	0.0095%	171	GAD981224991	0.2	0.000%	0.0%	2.9%
172	WID000808824	1,703.0	0.0033%	172	PAD987271848	0.2	0.000%	0.0%	2.3%
173	WID068318146	4.8	0.0000%	173	MID980683775	0.2	0.000%	0.0%	1.7%

A. Alpha-Numeric Sort:				B. Descending Quantity Sort (annual tons):					
Item	Facility EPAID	1997 Managed (tons)	Item %	Item	Facility EPAID	1997 Managed (tons)	Item Percentile	Cumulative Percentile	Rank Percentile
174	WID990829475	1,425.4	0.0028%	174	WA0000189431	0.2	0.000%	0.0%	1.1%
175	WVD988776852	476.2	0.0009%	175	CTD001169010	0.1	0.000%	0.0%	0.6%
Column totals =		51,496,157.3	100.0000%			51,496,157.3	100.000%		

Facilities Managing F002 & F005 Spent Solvent RCRA Hazardous Waste in Wastewater Treatment Units 1997 BRS QUERY: [F002 or F005] + (B101 or B201) + [M071 to M099 or M121 to M123 or M133 to M136]											
Item	EPA_ID	Waste Form Code	SIC Code	Source Code	Generated Tons (tons/year)	Onsite/Offsite Management	Waste Management System Code	1997 Managed Tons (tons/year)	F002 &/or F005?	Characteristic Hazard Waste Dxxx (other than D018)?	Waste code count
1	TND003376928	B101	2819		42,701,759.24	On site	M081	42,712,495.75	F002 & F005		5
2	PAD003043353	B101	2833	A34	2,485,320.00	On site	M136	2,485,320.00	F002 & F005	Yes	6
3	NYD003930849	B101	2079	A99	717,097.00	On site	M136	717,097.00	F005		1
4	NYR000030726	B101	3364	A69		On site	M082	583,819.85	F002		2
5	NYD059385120	B101	3679	A63	557,330.00	On site	M136	557,330.00	F002		1
6	NYD002211324	B101	3579	A63	526,468.00	On site	M136	498,170.00	F005	Yes	8
7	IND000806935	B101	2833	A49	443,615.51	On site	M135	443,615.51	F002 & F005	Yes	4
8	MAD001402320	B101	3861	A09	371,025.78	On site	M135	371,025.78	F002 & F005		3
9	ALD079109013	B101	3351	A64		On site	M083	343,704.15	F002		1
10	GAD039046800	B101	2834	A04	303,995.00	On site	M135	303,995.00	F005	Yes	5
11	PAD043882323	B101	3675	A69		On site	M135	208,333.20	F002	Yes	2
12	CAD093365435	B101	3764	A64		On site	M083	207,041.70	F002 & F005	Yes	5
13	LA4800014587	B101	3769	A31	206,022.97	On site	M136	206,022.97	F002	Yes	5
14	CA1800090010	B101	3764	A64		On site	M083	154,952.88	F002 & F005	Yes	5
15	IND006050967	B101	2833	A69		On site	M136	150,181.74	F002 & F005	Yes	4
16	MAD058060476	B101	3861	A75	129,000.00	On site	M135	129,000.00	F002		3
17	IND006050967	B101	2833	A37	124,053.00	On site	M136	124,053.00	F002 & F005	Yes	3
18	NYD980592497	B101	3861	A49	105,064.13	On site	M136	105,064.13	F002 & F005	Yes	8
19	ORD009023466	B101		A73	101,311.90	On site	M136	101,311.90	F002		1
20	NYD980592497	B101	3861	A49	93,607.39	On site	M136	93,607.39	F002 & F005	Yes	6
21	CAD093365435	B101	3764	A64		On site	M085	88,291.49	F002 & F005	Yes	5
22	NCD003217437	B101	2672	A73	37,531.28	On site	M135	75,062.55	F005		1
23	MAD001923408	B101	3669	A69		On site	M134	74,854.05	F002	Yes	2
24	NYD002220804	B101	2869	A75	65,290.78	On site	M121	65,290.78	F002		2
25	NYD003930849	B101	2079	A49	55,310.83	On site	M136	55,310.83	F005		2
26	NCD051330280	B201	2824	A73	25,891.08	On site	M135	51,782.17	F005		1
27	MAD000846493	B101	3861	A75	47,726.50	On site	M083	47,726.50	F002 & F005	Yes	5
28	MAD001033190	B201	2824	A73	453,765.43	On site	M135	45,376.54	F005	Yes	2
29	OKD079986568	B101	3861	A63	37,653.88	On site	M135	37,653.88	F002 & F005		2
30	COD076470525	B101	2833	A63		On site	M085	31,097.04	F002 & F005		4
31	MAD062163191	B101	3861	A31	29,372.42	On site	M135	29,372.42	F002 & F005		3
32	NYD002211324	B101	3579	A63	526,468.00	On site	M135	28,298.00	F005	Yes	8
33	NYD084006741	B101	3571	A63	27,442.81	On site	M082	27,442.81	F002 & F005		4

Item	EPA_ID	Waste Form Code	SIC Code	Source Code	Generated Tons (tons/year)	Onsite/Offsite Management	Waste Management System Code	1997 Managed Tons (tons/year)	F002 &/or F005?	Characteristic Hazard Waste Dxxx (other than D018)?	Waste code count
34	NYD980592497	B101	3861	A34	23,802.89	On site	M136	23,802.89	F002 & F005	Yes	8
35	NJD002385730	B101	2869	A73	23,656.41	On site	M094	23,656.41	F005	Yes	3
36	NYD980592497	B101	3861	A49	22,030.66	On site	M136	22,030.66	F005	Yes	4
37	VAD023741705	B101	3764	A69		On site	M083	19,650.00	F002		2
38	NYD980592497	B101	3861	A49	16,823.68	On site	M136	16,823.68	F002 & F005	Yes	9
39	NYD980592497	B101	3861	A49	15,494.18	On site	M136	15,494.18	F005	Yes	5
40	KSD007482011	B101	3721	A69		On site	M135	15,072.23	F002	Yes	4
41	MND000819268	B101	3489	A61		On site	M083	15,006.65	F002		2
42	PAD041399403	B101	2819	A69		On site	M135	14,553.79	F005		1
43	FL6170024412	B201	9711	A01	7,502.75	On site	M135	7,502.75	F002 & F005	Yes	5
44	ALD003297116	B101	3695	A69		On site	M081	6,838.54	F005		2
45	NYD986954147	B101	9999	A69	6,713.02	On site	M136	6,713.04	F002		1
46	NYD980592497	B101	3861	A49	6,365.34	On site	M136	6,365.34	F002 & F005	Yes	6
47	FLD046771952	B201	3721	A01	5,930.05	On site	M135	5,930.05	F002	Yes	2
48	OKD000632737	B101	7389	A63	5,800.59	On site	M135	5,800.59	F002 & F005		5
49	NYD041292509	B101	3579	A63	5,472.00	On site	M135	5,472.00	F005	Yes	4
50	VAD988170445	B101	2869	A78	5,374.78	On site	M081	5,374.78	F005		2
51	NYD002100352	B101	2542	A69	4,965.87	On site	M083	4,965.87	F002		1
52	NYD059385120	B101	3679	A63	4,862.72	On site	M135	4,862.72	F002		1
53	NYD980592497	B101	3861	A37	4,497.31	On site	M136	4,497.31	F002 & F005	Yes	4
54	NYD980592497	B101	3861	A33	4,493.70	On site	M136	4,493.70	F002 & F005	Yes	9
55	NYD980592497	B101	3861	A35	4,491.61	On site	M136	4,491.61	F005		1
56	WAR000008979	B101		A06	4,312.61	On site	M074	4,312.61	F002 & F005	Yes	4
57	NYD980592497	B101	3861	A32	3,670.63	On site	M136	3,670.63	F002 & F005	Yes	8
58	NYD980592497	B101	3861	A37	3,434.63	On site	M136	3,434.63	F005	Yes	4
59	NYD980592497	B101	3861	A32	3,403.74	On site	M136	3,403.74	F002 & F005	Yes	13
60	COD007068646	B101	3761	A69		On site	M136	3,380.90	F002 & F005		4
61	TXD981512122	B101	3053	A73	3,206.97	On site	M081	3,175.70	F005	Yes	3
62	UTD009081357	B101	3761	A75	3,048.17	On site	M135	3,048.17	F002 & F005		5
63	COD980952097	B101	9199	A65		On site	M083	2,998.35	F002 & F005		4
64	FL6170024412	B101	9711	A22	2,849.85	On site	M135	2,849.85	F002 & F005		6
65	CAD000030494	B101	3764	A94	2,848.37	On site	M092	2,848.37	F002 & F005	Yes	5
66	CA1800090010	B101	3764	A64		On site	M085	2,809.84	F002 & F005	Yes	5
67	TXD077603371	B101	0	A49	8,006.53	Off site	M134	2,800.79	F005	Yes	4

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68	NYD980592497	B101	3861	A35	2,670.81	On site	M136	2,670.81	F002 & F005	Yes	9
69	NYD000824482	B101	2812	A51	2,095.74	On site	M135	2,095.74	F002	Yes	3
70	NED981723513	B101	4953	A99	4,045.40	Off site	M079	2,059.99	F002 & F005	Yes	171
71	FLD004073177	B101	3721	A29	1,968.72	On site	M135	1,968.72	F002 & F005	Yes	6
72	GAD061022216	B101	3721	A01	1,891.66	On site	M074	1,891.66	F002	Yes	2
73	OHD093945293	B101	4953	A73		Off site	M134	1,699.38	F002 & F005	Yes	62
74	NYD980592497	B101	3861	A33	1,673.59	On site	M136	1,673.59	F005	Yes	2
75	WA7890008967	B101		A99	1,650.44	On site	M122	1,650.44	F002	Yes	4
76	NYD980592497	B101	3861	A78	1,591.48	On site	M136	1,591.48	F005		1
77	CA7170090016	B101	9711	A19	1,575.92	On site	M135	1,575.92	F002	Yes	3
78	NYD980592497	B101	3861	A33	1,538.73	On site	M136	1,538.73	F005	Yes	3
79	UTD001705029	B101	3764	A36	1,522.31	On site	M135	1,522.31	F002 & F005		4
80	NJD002385730	B101	2869	A94	1,501.20	On site	M094	1,501.20	F002 & F005		2
81	NYD980592497	B101	3861	A49	1,419.22	On site	M136	1,419.22	F002 & F005	Yes	6
82	TXD077603371	B101	0	A49	8,006.53	Off site	M094	1,293.48	F005	Yes	4
83	NYD003930849	B101	2079	A34	1,266.14	On site	M136	1,266.14	F005	Yes	5
84	LAD985218742	B101	3721	A75	1,251.17	On site	M135	1,251.17	F005	Yes	8
85	MID000820381	B101	2834	A33	1,201.98	On site	M135	1,201.98	F005		2
86	NYD980592497	B101	3861	A32	1,083.54	On site	M136	1,083.54	F002 & F005	Yes	8
87	COD000694869	B101	2869	A09	1,000.64	Off site	M091	1,000.64	F005	Yes	4
88	OKD000758599	B201	3561	A65	913.06	On site	M083	913.06	F002 & F005	Yes	7
89	WID000808824	B101	7389	A09	1,031.77	Off site	M094	877.81	F005		1
90	WID990829475	B101	7389	A19		Off site	M091	877.69	F005		1
91	NYD980592497	B101	3861	A34	847.76	On site	M136	847.76	F005	Yes	2
92	CAD000030494	B101	3764	A94	1,308.38	On site	M122	804.07	F002 & F005	Yes	5
93	WID000808824	B101	7389	A09	1,031.77	Off site	M094	745.80	F005		1
94	GAD003324985	B101	2833	A37	726.66	On site	M136	726.66	F005	Yes	3
95	NYD981561962	B101	9999	A69	705.30	Off site	M085	705.30	F002	Yes	2
96	TXD052649027	B101	7389	A89	797.57	Off site	M134	669.76	F002	Yes	4
97	PAD030069140	B201	2869	A59	615.50	Off site	M085	615.50	F002 & F005	Yes	4
98	OHD001926740	B101	7389	A73	811.76	Off site	M094	589.93	F002 & F005	Yes	16
99	KYD053348108	B101	4953	A99	580.22	On site	M082	580.22	F002		2
100	CAD008302903	B101	4953	A99	562.64	Off site	M079	562.64	F005		1
101	FL6170024412	B101	9711	A22	551.57	On site	M135	551.57	F002 & F005		7

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102	NJD056356066	B101	2834	A34	3,810.83	Off site	M082	549.57	F002	Yes	3
103	OHD980681571	B101	7389	A59	4,295.72	Off site	M094	527.51	F002 & F005	Yes	9
104	TXD981898760	B101	3079	A75	596.00	Off site	M083	499.00	F002		1
105	NYD980592497	B101	3861	A33	495.40	On site	M136	495.40	F005		1
106	IND000646943	B101	9999	A99	495.02	Off site	M082	495.02	F002 & F005	Yes	29
107	AZD009015389	B101	8741	A19	487.49	Off site	M081	487.49	F002	Yes	5
108	WVD988776852	B101	3728	A01	476.17	Off site	M134	476.17	F002	Yes	4
109	NYD980592497	B101	3861	A49	473.26	On site	M136	473.26	F002 & F005	Yes	4
110	UTD001705029	B101	3764	A09	462.08	On site	M135	462.08	F002 & F005		4
111	NYD003930849	B101	2079	A35	455.09	On site	M136	455.09	F005		1
112	NYD980592497	B101	3861	A31	425.34	On site	M136	425.34	F002		1
113	GAD003324985	B101	2833	A37	422.36	On site	M136	422.36	F005		2
114	AZD009015389	B101	8741	A31	420.60	Off site	M134	420.60	F002 & F005		4
115	UTD001705029	B101	3764	A09	370.11	Off site	M134	362.30	F002 & F005		4
116	GAD033582461	B101	4953	A75	362.24	On site	M094	362.24	F002 & F005	Yes	5
117	WAR000008979	B101		A01	357.79	On site	M074	357.79	F002 & F005	Yes	4
118	PAD030069140	B201	2869	A59	352.90	Off site	M085	352.90	F005	Yes	5
119	FL6170024412	B201	9711	A21	348.36	On site	M135	348.36	F002 & F005	Yes	6
120	ILD980613913	B101	7389	A73		Off site	M134	347.28	F002 & F005		4
121	OHD066060609	B101	7389	A99		Off site	M094	340.91	F002 & F005	Yes	24
122	ILD005083316	B101	2821	A03	425.75	Off site	M094	334.44	F005		3
123	OHD980681571	B101	7389	A19		Off site	M094	331.94	F005	Yes	4
124	PRD090036021	B101	2834	A37	294.90	On site	M135	294.90	F002		2
125	WID990829475	B101	7389	A73	287.73	Off site	M091	287.73	F005		1
126	CTD064828726	B101	2869	A37	284.03	On site	M135	284.03	F005	Yes	4
127	OHD004182408	B101	3471	A64	278.38	Off site	M094	278.38	F005	Yes	5
128	OKD981909849	B101	4581	A21	275.93	Off site	M134	275.93	F002	Yes	2
129	MAD000844597	B101	2899	A32	491.77	Off site	M081	275.31	F005	Yes	3
130	WID990829475	B101	7389	A79	260.01	Off site	M091	260.01	F005		1
131	MAR000007955	B101	2865	A31	571.38	Off site	M083	259.07	F002 & F005	Yes	5
132	MAD980912323	B101	2869	A37	255.70	Off site	M091	255.70	F002	Yes	2
133	RID058065707	B201	3081	A09	295.63	Off site	M081	251.17	F005	Yes	3
134	OKD089761290	B101	9999	A01	857.79	Off site	M134	250.99	F002 & F005	Yes	211
135	NYD980592497	B101	3861	A34	247.51	On site	M136	247.51	F002	Yes	3

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136	IND000646943	B101	9999	A99	242.39	Off site	M092	242.39	F002 & F005	Yes	35
137	NYD002081396	B101	2834	A34	238.90	On site	M083	238.90	F005	Yes	3
138	MND985694736	B101	3728	A06	237.01	On site	M121	237.01	F002		1
139	WAR000008979	B101		A27	223.10	On site	M072	223.10	F002 & F005	Yes	4
140	MAD980912323	B101	2869	A31	219.40	Off site	M091	219.40	F005	Yes	2
141	IND085616837	B101	2869	A73	214.46	Off site	M085	199.59	F002		1
142	ILD980613913	B101	7389	A73	4,078.52	Off site	M099	189.80	F002 & F005		4
143	CTD001449784	B101	3721	A01	189.80	Off site	M085	185.91	F002 & F005	Yes	4
144	MAD001402320	B101	3861	A32	185.74	Off site	M085	185.74	F002		1
145	PAD980551964	B201	2834	A34	196.94	Off site	M081	183.09	F002 & F005	Yes	5
146	OHD004172565	B101	2869	A94	160.09	Off site	M094	182.70	F005	Yes	6
147	NYD980592497	B101	3861	A04	182.23	On site	M136	182.23	F002 & F005	Yes	6
148	NYD980592497	B101	3861	A19	180.56	On site	M136	180.56	F005		2
149	FL6170024412	B201	9711	A75	498.80	Off site	M134	178.07	F002 & F005		7
150	NYD980592497	B101	3861	A32	169.72	On site	M136	169.72	F005	Yes	2
151	PAD067362327	B101	3341	A78	160.76	Off site	M094	160.76	F002	Yes	2
152	MAD000844597	B101	2899	A32	150.85	Off site	M081	150.85	F005	Yes	4
153	IND000646943	B101	9999	A99	141.64	Off site	M082	141.64	F002 & F005	Yes	24
154	NYD980592497	B101	3861	A37	141.10	On site	M136	141.10	F002 & F005	Yes	4
155	NYD980592497	B101	3861	A04	135.14	On site	M136	135.14	F002 & F005	Yes	5
156	NYD980592497	B101	3861	A09	132.51	On site	M136	132.51	F002 & F005	Yes	4
157	CTD001840974	B101	3829	A49	162.19	Off site	M094	121.15	F002	Yes	3
158	IND000646943	B101	9999	A99	117.79	Off site	M082	117.79	F002 & F005	Yes	18
159	ILD980613913	B101	7389	A73		Off site	M134	116.50	F002 & F005		4
160	PAD067098822	B101	4953	A89	143.75	Off site	M092	116.49	F002 & F005	Yes	15
161	IND000646943	B101	9999	A99	115.86	Off site	M082	115.86	F002 & F005	Yes	24
162	MAD000604447	B101	5093	A89	341.75	Off site	M094	115.61	F002 & F005	Yes	25
163	TXD077603371	B101	0	A49	8,006.53	Off site	M134	114.51	F005	Yes	4
164	NYD980592497	B101	3861	A37	110.46	On site	M136	110.46	F005	Yes	3
165	KYD000770313	B101	4953	A99	108.71	Off site	M081	108.71	F005		2
166	NCD980842132	B201	4953	A99	774.84	Off site	M085	106.31	F002 & F005		4
167	NYD980592497	B101	3861	A32	105.39	On site	M136	105.39	F005	Yes	3
168	NYD980592497	B101	3861	A32	103.02	On site	M136	103.02	F005	Yes	3
169	COD160887741	B101	4581	A01	100.25	On site	M135	100.25	F002 & F005		3

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170	IND000646943	B101	9999	A99	100.23	Off site	M082	100.23	F002 & F005	Yes	18
171	ILD000608471	B201	4953	A89	103.92	Off site	M085	99.52	F002		1
172	MAD019371079	B101	4953	A04	139.98	Off site	M099	93.79	F002	Yes	7
173	VAD982362428	B101	3577	A78	93.22	Off site	M081	93.22	F002		3
174	ILD005083316	B101	2821	A03	425.75	Off site	M094	91.30	F005		3
175	TXD056542749	B101	4581	A06	55.36	On site	M071	87.15	F002 & F005	Yes	4
176	MAD980912323	B101	2869	A32	107.02	Off site	M081	85.13	F005	Yes	2
177	PAD002311884	B101	2851	A94	82.28	Off site	M094	82.28	F005	Yes	3
178	NYD980592497	B101	3861	A09	81.38	On site	M136	81.38	F002 & F005	Yes	7
179	WID000808824	B101	7389	A09	1,031.77	Off site	M094	79.39	F005		1
180	CTD055310759	B101	2819	A19	78.69	Off site	M092	78.69	F002	Yes	3
181	MOD071987416	B101	4581	A01	253.74	Off site	M081	75.89	F002	Yes	4
182	TXD058276130	B101	2821	A75	75.70	Off site	M134	75.70	F002 & F005		3
183	GAD051010429	B101	2841	A31	230.45	Off site	M091	73.71	F002	Yes	5
184	NYD980592497	B101	3861	A09	72.83	On site	M136	72.83	F005	Yes	4
185	IND000646943	B101	9999	A99	68.55	Off site	M082	68.55	F002 & F005	Yes	16
186	IND000646943	B101	9999	A99	67.35	Off site	M082	67.35	F002 & F005	Yes	26
187	NYD980592497	B101	3861	A04	62.55	On site	M136	62.55	F002 & F005	Yes	5
188	TXD052649027	B101	7389	A89	797.57	Off site	M134	60.41	F002	Yes	4
189	CTD980668198	B101	9711	A01	136.46	Off site	M134	57.69	F002	Yes	5
190	NJD002147023	B101	2833	A99	55.99	Off site	M089	55.99	F005	Yes	3
191	CAD981375983	B101	7216	A73	54.42	On site	M092	54.42	F002		1
192	FLD982102295	B101	8999	A06	52.13	On site	M135	52.13	F002		1
193	CTD000604488	B201	4953	A89	65.01	Off site	M085	50.54	F002 & F005		24
194	NYD003930849	B101	2079	A59	50.04	On site	M136	50.04	F005		1
195	ALD983176520	B101	3721	A03	50.00	On site	M077	50.00	F005		2
196	NYD980592497	B101	3861	A33	49.25	On site	M136	49.25	F002 & F005		3
197	IND000646943	B101	9999	A99	49.11	Off site	M082	49.11	F002 & F005	Yes	19
198	OHD066060609	B101	7389	A94	48.00	Off site	M094	48.00	F002 & F005	Yes	20
199	NYD980592497	B101	3861	A99	46.91	On site	M136	46.91	F005		1
200	MAD001402320	B101	3861	A09	47.05	Off site	M079	46.82	F002 & F005	Yes	4
201	IND000646943	B101	9999	A99	46.34	Off site	M082	46.34	F002 & F005	Yes	17
202	LAD000757286	B101	2899	A75	56.00	Off site	M134	45.27	F002 & F005	Yes	4
203	ILD000608471	B101	4953	A89	45.24	Off site	M085	45.24	F005	Yes	5

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204	MID083684290	B101	2869	A34	698.39	Off site	M074	45.10	F005	Yes	3
205	IND000646943	B101	9999	A99	44.75	Off site	M082	44.75	F005	Yes	16
206	RID058065707	B201	3081	A09	295.63	Off site	M081	44.46	F005	Yes	3
207	IND000646943	B101	9999	A99	43.72	Off site	M082	43.72	F002 & F005	Yes	12
208	ILD000608471	B201	4953	A89	42.40	Off site	M085	42.40	F002	Yes	5
209	NJD002147023	B201	2833	A59	42.00	Off site	M089	42.00	F005		2
210	PAD980550412	B101	2833	A09	41.70	Off site	M081	41.70	F002 & F005	Yes	5
211	OKD079986568	B101	3861	A37	41.69	Off site	M082	41.69	F002 & F005	Yes	4
212	CTD001840974	B101	3829	A49	162.19	Off site	M094	41.04	F002	Yes	3
213	CTD000604488	B101	4953	A89	42.33	Off site	M077	40.03	F002 & F005	Yes	13
214	ILD000608471	B201	4953	A89	40.00	Off site	M085	40.00	F005	Yes	5
215	NYD000707901	B101	3674	A09	38.50	Off site	M085	38.50	F002 & F005	Yes	7
216	KSD007246846	B101	5093	A51	42.89	Off site	M091	37.01	F005	Yes	13
217	OHD000816629	B201	4953	A89		Off site	M099	36.20	F002 & F005	Yes	79
218	TXD056542749	B101	4581	A19	22.14	On site	M071	34.86	F002 & F005	Yes	4
219	TXD056542749	B101	4581	A29	22.14	On site	M071	34.86	F002 & F005	Yes	4
220	CTD001449784	B101	3721	A63	37.50	Off site	M085	34.62	F002	Yes	2
221	TXD052649027	B101	7389	A89	797.57	Off site	M089	33.04	F002	Yes	4
222	IND000646943	B101	9999	A99	33.03	Off site	M092	33.03	F002 & F005	Yes	27
223	NYD003930849	B101	2079	A04	32.03	On site	M136	32.03	F005	Yes	2
224	MAR000007559	B101	3695	A29	196.18	On site	M135	30.57	F005		1
225	MAD053452637	B201	4226	A89	241.74	Off site	M085	27.11	F002 & F005	Yes	63
226	NYD980592497	B101	3861	A34	26.79	On site	M136	26.79	F002 & F005	Yes	4
227	NYD002067932	B101	2672	A65	25.70	Off site	M099	25.70	F002 & F005	Yes	4
228	OHD980681571	B201	7389	A37		Off site	M094	25.57	F002 & F005	Yes	4
229	KSD007246846	B101	5093	A19	25.49	Off site	M089	25.49	F002		2
230	VAD980831176	B101	3541	A69		On site	M082	23.96	F002	Yes	3
231	IND000646943	B101	9999	A99	23.08	Off site	M082	23.08	F002 & F005	Yes	18
232	ILD000608471	B101	4953	A89	22.41	Off site	M085	22.41	F005	Yes	5
233	ILD000608471	B201	4953	A89	22.40	Off site	M085	22.40	F002	Yes	5
234	ILD000608471	B201	4953	A89	22.00	Off site	M085	22.00	F002	Yes	5
235	MID083684290	B101	2869	A34	698.39	Off site	M074	21.89	F005	Yes	3
236	KSD980854285	B101	2869	A37	21.75	Off site	M082	21.75	F005	Yes	3
237	IND000646943	B101	9999	A99	21.47	Off site	M082	21.47	F002 & F005	Yes	19

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238	MOD071987416	B101	4581	A01	253.74	Off site	M091	20.98	F002	Yes	4
239	NYD980592497	B101	3861	A78	20.85	On site	M136	20.85	F002 & F005	Yes	14
240	NJD002385730	B101	2869	A37	20.85	On site	M094	20.85	F005	Yes	2
241	ILD000608471	B201	4953	A89	20.80	Off site	M085	20.80	F005	Yes	4
242	ILD000608471	B201	4953	A89	20.80	Off site	M085	20.80	F002 & F005	Yes	5
243	FL6170024412	B201	9711	A75	99.44	Off site	M134	20.51	F002 & F005		7
244	MAR000007955	B101	2865	A31	571.38	Off site	M083	20.50	F002 & F005	Yes	5
245	MAD000604447	B101	5093	A89	341.75	Off site	M078	20.41	F002 & F005	Yes	25
246	ILD000608471	B201	4953	A89	20.40	Off site	M085	20.40	F005	Yes	5
247	MAD019371079	B101	4953	A73	30.18	Off site	M099	20.22	F002	Yes	7
248	ILD000608471	B201	4953	A89	32.02	Off site	M085	20.00	F005	Yes	3
249	IND000646943	B101	9999	A99	19.99	Off site	M092	19.99	F005	Yes	4
250	CTD980668198	B101	9711	A01	136.46	Off site	M092	19.89	F002	Yes	5
251	ILD000608471	B201	4953	A89	19.20	Off site	M085	19.20	F005	Yes	5
252	ILD000608471	B201	4953	A89	19.20	Off site	M085	19.20	F002 & F005		5
253	VAR000004978	B201	3679	A99	19.14	Off site	M082	19.14	F002		3
254	ILD000608471	B201	4953	A89	18.80	Off site	M085	18.80	F005	Yes	4
255	ILD000608471	B201	4953	A89	18.80	Off site	M085	18.80	F002 & F005	Yes	5
256	OKD987083946	B101	3721	A01	18.77	Off site	M134	18.77	F002		1
257	CA7170090016	B101	9711	A19	18.71	On site	M135	18.71	F002	Yes	3
258	TXD056542749	B101	4581	A76	11.07	On site	M071	17.43	F002	Yes	4
259	IND000646943	B101	9999	A99	17.20	Off site	M092	17.20	F002 & F005	Yes	18
260	DED053304770	B101	2821	A04	17.14	On site	M135	17.14	F005	Yes	3
261	FLD980729610	B201	4953	A99	933.15	Off site	M081	17.09	F002 & F005	Yes	38
262	NJD006980924	B101	8731	A69	16.97	On site	M082	16.97	F002		1
263	UTD001705029	B101	3764	A63		On site	M135	16.53	F002		2
264	IND000646943	B101	9999	A99	15.80	Off site	M092	15.80	F005	Yes	3
265	PAD004498432	B101	2869	A37	15.64	Off site	M081	15.64	F002 & F005	Yes	5
266	IND085616837	B101	2869	A73	214.46	Off site	M085	14.87	F002		1
267	ILD000608471	B201	4953	A89	14.80	Off site	M085	14.80	F002	Yes	5
268	GAR000012336	B101	2231	A69	14.80	Off site	M082	14.80	F002 & F005		3
269	NCD986177061	B201	8734	A94	23.81	Off site	M085	14.43	F002	Yes	4
270	IND000646943	B101	9999	A99	14.29	Off site	M082	14.29	F005	Yes	7
271	IND000646943	B101	9999	A99	14.11	Off site	M082	14.11	F002 & F005	Yes	10

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272	ILD000608471	B201	4953	A89	13.60	Off site	M085	13.60	F005	Yes	5
273	TXD052649027	B101	7389	A89	797.57	Off site	M091	13.37	F002	Yes	4
274	IND000646943	B101	9999	A99	13.29	Off site	M082	13.29	F005	Yes	11
275	IND000646943	B101	9999	A99	12.96	Off site	M082	12.96	F002 & F005	Yes	16
276	TXD052649027	B101	7389	A89	797.57	Off site	M079	12.61	F002	Yes	4
277	IND000646943	B101	9999	A99	12.19	Off site	M082	12.19	F002 & F005	Yes	18
278	CAD982437089	B101	3728	A21	12.09	Off site	M071	12.09	F005	Yes	4
279	CTD000845198	B101	4911	A51	11.90	Off site	M092	11.90	F002 & F005		3
280	NYD980592497	B101	3861	A35	11.71	On site	M136	11.71	F005	Yes	4
281	NYD000809350	B101	3411	A65	11.10	Off site	M083	11.10	F005		2
282	LAD000757286	B101	2899	A75	56.00	On site	M136	10.73	F002 & F005	Yes	4
283	NJD002385730	B101	2869	A94	10.43	On site	M094	10.43	F002	Yes	2
284	TXD062128004	B101	5161	A04	10.33	Off site	M134	10.33	F002		1
285	OHD000816629	B201	4953	A89		Off site	M099	10.25	F005	Yes	71
286	NYD980592497	B101	3861	A31	10.01	On site	M136	10.01	F002		1
287	TND982109142	B101	4953		9.22	On site	M134	9.22	F002		5
288	CTD000604488	B201	4953	A89	12.04	Off site	M085	9.06	F002 & F005	Yes	14
289	CTD000844332	B101	3724	A63	9.02	Off site	M094	9.02	F002		1
290	TXD077603371	B101	0	A49	8,006.53	Off site	M121	8.51	F005	Yes	4
291	CTD001139617	B101	2891	A69	10.32	Off site	M099	8.04	F002	Yes	3
292	NYD002211324	B101	3579	A09	8.02	Off site	M085	7.82	F002 & F005	Yes	6
293	CAD000627273	B101	3728	A09	7.76	Off site	M084	7.76	F002	Yes	5
294	FLD980729610	B201	4953	A99	933.15	Off site	M081	7.72	F002 & F005	Yes	38
295	NYD980592497	B101	3861	A09	7.61	On site	M136	7.61	F005		1
296	PAD001887579	B101	3353	A29	6.99	Off site	M085	6.74	F005	Yes	3
297	CAD049904766	B101	3577	A65	7.81	Off site	M099	6.66	F002		1
298	NYD980592497	B101	3861	A37	6.31	On site	M136	6.31	F005	Yes	3
299	KSD007246846	B101	5093	A51	42.89	Off site	M091	5.88	F005	Yes	13
300	NYD980592497	B101	3861	A09	5.66	On site	M136	5.66	F005	Yes	3
301	MED985467935	B101	8734	A94	5.65	Off site	M099	5.65	F005	Yes	6
302	NYD002211324	B101	3579	A53	11.18	Off site	M085	5.25	F002 & F005		5
303	MSD054179403	B201	2911	A94	5.20	On site	M081	5.20	F005		5
304	NYD000098558	B101	7216	A61	5.14	Off site	M089	5.14	F002	Yes	2
305	PAD067098822	B101	4953	A89	143.75	Off site	M078	5.05	F002 & F005	Yes	15

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306	WID068318146	B101	3089	A21	4.80	Off site	M085	4.80	F002		1
307	UTD001705029	B101	3764	A63		On site	M135	4.73	F002		2
308	OHD066060609	B101	7389	A73	4.64	Off site	M094	4.64	F002 & F005	Yes	20
309	ILD000608471	B201	4953	A89	4.40	Off site	M085	4.40	F005		3
310	IND000646943	B101	9999	A99	4.26	Off site	M092	4.26	F002 & F005	Yes	21
311	NYD980592497	B101	3861	A19	6.19	On site	M136	4.24	F002 & F005	Yes	149
312	OHD052324290	B101	3679	A64	4.16	Off site	M134	4.16	F005		2
313	OHD980681571	B101	7389	A19		Off site	M094	4.15	F005	Yes	3
314	OHD066060609	B101	7389	A73	4.11	Off site	M094	4.11	F002 & F005	Yes	20
315	MID000820381	B101	2834	A36	17.54	On site	M134	3.82	F002 & F005		3
316	NYD003930849	B101	2079	A94	3.36	On site	M136	3.36	F005	Yes	3
317	NYD980592497	B101	3861	A04	3.21	On site	M136	3.21	F005	Yes	3
318	ILD000608471	B201	4953	A89	3.00	Off site	M085	3.00	F002	Yes	2
319	ILD000608471	B201	4953	A89	2.88	Off site	M085	2.88	F002 & F005	Yes	5
320	NYD080480734	B101	3571	A09		Off site	M089	2.86	F005	Yes	3
321	ILD000608471	B201	4953	A89	2.76	Off site	M085	2.76	F005	Yes	3
322	IND000646943	B101	9999	A99	2.65	Off site	M082	2.65	F002 & F005	Yes	22
323	CT5000001107	B101	9511	A94	3.88	Off site	M077	2.52	F002	Yes	2
324	FLD981474802	B201	4953	A99	71.49	Off site	M081	2.40	F002 & F005	Yes	14
325	CTD001139617	B101	2891	A69	10.32	Off site	M099	2.28	F002	Yes	3
326	NYD980592497	B101	3861	A04	2.09	On site	M136	2.09	F005	Yes	3
327	OHD005046677	B101	3724	A94	1.96	Off site	M099	1.96	F005		2
328	NY0000926436	B101	2835	A04	1.88	On site	M136	1.88	F005	Yes	4
329	ORD099149445	B101		A01	1.88	Off site	M082	1.88	F002 & F005	Yes	4
330	OHD980681571	B101	7389	A94		Off site	M082	1.83	F005	Yes	4
331	FLD981474802	B101	4953	A99	38.12	Off site	M099	1.73	F002 & F005	Yes	25
332	OHD980681571	B101	7389	A21		Off site	M094	1.60	F005	Yes	4
333	OHD980681571	B201	7389	A19		Off site	M094	1.60	F002	Yes	2
334	ILD000608471	B201	4953	A89	1.54	Off site	M085	1.54	F005	Yes	2
335	NYD002211324	B101	3579	A59	2.83	Off site	M085	1.53	F005	Yes	2
336	NYD980592497	B201	3861	A49	1.31	On site	M136	1.31	F005	Yes	5
337	NYD980592497	B101	3861	A49	1.29	On site	M136	1.29	F002 & F005		2
338	OHD980681571	B201	7389	A89		Off site	M082	1.19	F005	Yes	4
339	CT5000001107	B101	9511	A94	3.88	Off site	M077	1.15	F002	Yes	2

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340	ILD000608471	B201	4953	A89	1.10	Off site	M085	1.10	F005	Yes	4
341	MD6150004095	B201	8099	A71	1.27	On site	M135	1.05	F002	Yes	6
342	NYD980592497	B101	3861	A60	0.92	On site	M136	0.92	F002 & F005		2
343	WAD988478723	B101		A99	0.92	Off site	M121	0.92	F002		2
344	NHD500015441	B201	3499	A21	0.90	Off site	M075	0.90	F005		3
345	MD6150004095	B201	8099	A71	1.04	On site	M135	0.88	F002	Yes	8
346	OHD980681571	B101	7389	A38		Off site	M094	0.88	F002		2
347	TXD050858182	B101	3679	A69	0.34	Off site	M085	0.83	F002	Yes	4
348	NYD053719894	B101	3724	A93	0.83	Off site	M074	0.83	F002	Yes	2
349	ILD005158274	B101	3585	A61	4.18	Off site	M099	0.77	F002	Yes	2
350	NYD980592497	B101	3861	A31	0.68	On site	M136	0.68	F002 & F005		3
351	NYD980592497	B101	3861	A94	0.66	On site	M136	0.66	F002 & F005	Yes	3
352	ILD000608471	B201	4953	A89	0.66	Off site	M085	0.66	F002	Yes	3
353	NYD080480734	B101	3571	A69		Off site	M089	0.60	F002		2
354	OHD980681571	B201	7389	A69		Off site	M094	0.50	F002	Yes	2
355	NYD002211324	B101	3579	A09	8.02	Off site	M078	0.49	F002 & F005	Yes	6
356	WAD009249863	B101		A19	0.94	Off site	M082	0.48	F005		2
357	CTD001186212	B101	3675	A09	0.46	Off site	M085	0.46	F002	Yes	2
358	ALD000622464	B201	4953	A89	8.79	Off site	M079	0.46	F002 & F005	Yes	40
359	OHD980681571	B201	7389	A31		Off site	M094	0.45	F005		1
360	ILD000608471	B201	4953	A89	0.44	Off site	M085	0.44	F005	Yes	2
361	NYD980592497	B101	3861	A31	0.42	On site	M136	0.42	F005	Yes	2
362	AKD009252230	B101	2611	A53	0.41	Off site	M082	0.41	F002 & F005		3
363	ORD009227398	B201		A06	0.31	Off site	M082	0.31	F002	Yes	4
364	GAD980845077	B101	5169	A57	0.30	Off site	M099	0.30	F002 & F005	Yes	4
365	PAD003038056	B201	3861	A09	1.15	Off site	M091	0.30	F005	Yes	3
366	NYD980592497	B101	3861	A69	0.29	On site	M136	0.29	F002 & F005		13
367	CTD001149277	B101	3724	A63	0.23	Off site	M094	0.23	F002		1
368	GAD981224991	B101	5999	A69	0.23	Off site	M075	0.23	F002	Yes	3
369	PAD987271848	B201	2812	A94	39.74	Off site	M094	0.23	F002 & F005	Yes	4
370	ILD000608471	B201	4953	A89	0.22	Off site	M085	0.22	F005	Yes	5
371	CT5000001107	B101	9511	A94	3.88	Off site	M077	0.21	F002	Yes	2
372	TXD050858182	B101	3679	A69	0.34	Off site	M077	0.20	F002	Yes	4
373	MID980683775	B101	2522	A19	0.85	Off site	M091	0.20	F005	Yes	10

Item	EPA_ID	Waste Form Code	SIC Code	Source Code	Generated Tons (tons/year)	Onsite/Offsite Management	Waste Management System Code	1997 Managed Tons (tons/year)	F002 &/or F005?	Characteristic Hazard Waste Dxxx (other than D018)?	Waste code count
374	WA0000189431	B201		A58	0.19	Off site	M082	0.19	F005	Yes	3
375	NYD002211324	B101	3579	A53	0.18	Off site	M085	0.18	F002 & F005		4
376	NYD980592497	B101	3861	A99	0.17	On site	M136	0.17	F005		1
377	CTD001169010	B101	2899	A37	12.48	Off site	M077	0.10	F002	Yes	3
378	NYD980592497	B201	3861	A35	0.10	On site	M136	0.10	F005	Yes	3
379	NYD980592497	B201	3861	A29	0.08	On site	M136	0.08	F005	Yes	3
380	NYD980592497	B101	3861	A34	0.06	On site	M136	0.06	F005		1
381	ILD000608471	B201	4953	A89	0.04	Off site	M085	0.04	F005	Yes	3
382	NYD980592497	B101	3861	A99	0.02	On site	M136	0.02	F005	Yes	5
383	NYD980592497	B201	3861	A49	0.01	On site	M136	0.01	F005	Yes	2
Column totals =					50,485,846.64			51,496,157.28			

**3. USEPA Office of Solid Waste
RCRAInfo Identity of Facilities
Which Generate or Manage
RCRA Hazardous Wastes**

Database Query Findings

Count of RCRA-Regulated Hazardous Waste Facilities Which Report Having a Surface Impoundment* (Source: Envirofacts RCRAInfo Database Query, March 2002)				
RCRA Waste Generator Size	Type of Surface Impoundment			
	Treatment	Storage	Disposal	Row Totals
Large Quantity Generator (LQG): >1,000kg hazardous waste in a calendar month	392	666	253	1,311
Small Quantity Generator (SQG): <1,000kg hazardous waste in a calendar month	96	160	72	328
Column totals =	488	826	325	1,639

Explanatory Notes:

- (a) As of year 2002, the USEPA RCRAInfo database also contains the RCRA "Biennial Reporting System", in addition to other RCRA program data such as RCRA permits and RCRA-permitted facility identification information.
- (b) kg = kilogram; 1,000 kg = one metric ton = 2,200 pounds.
- (c) * Surface impoundment: a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons. (40 CFR 260.10).

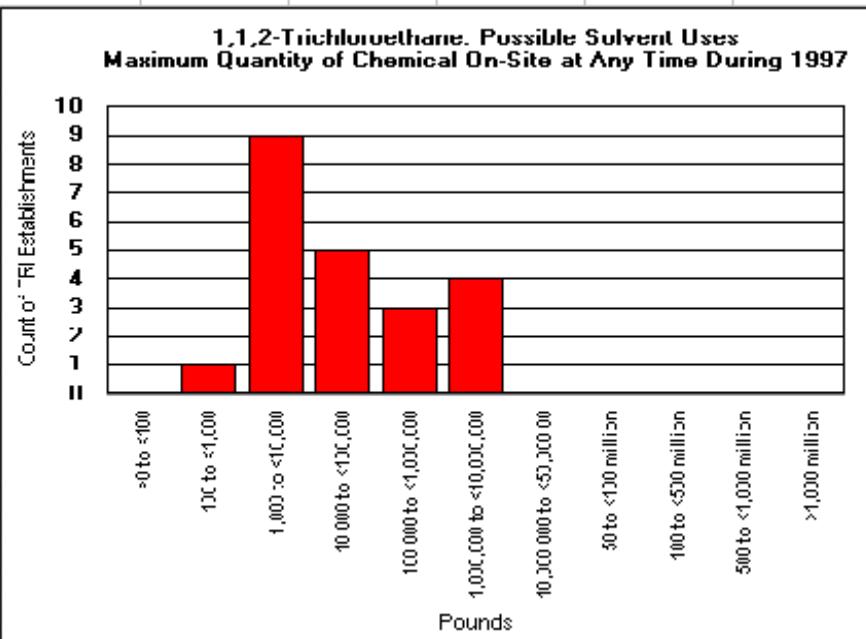
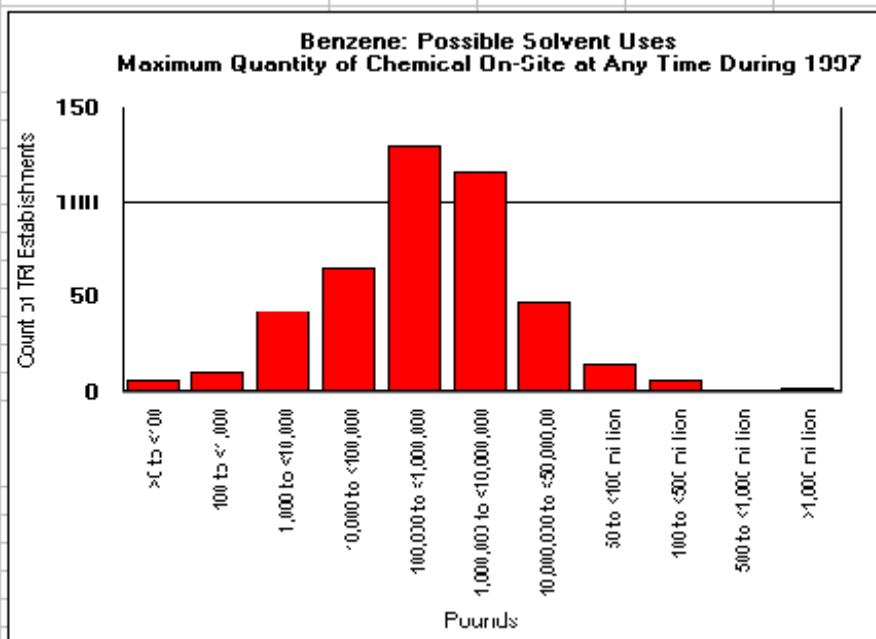
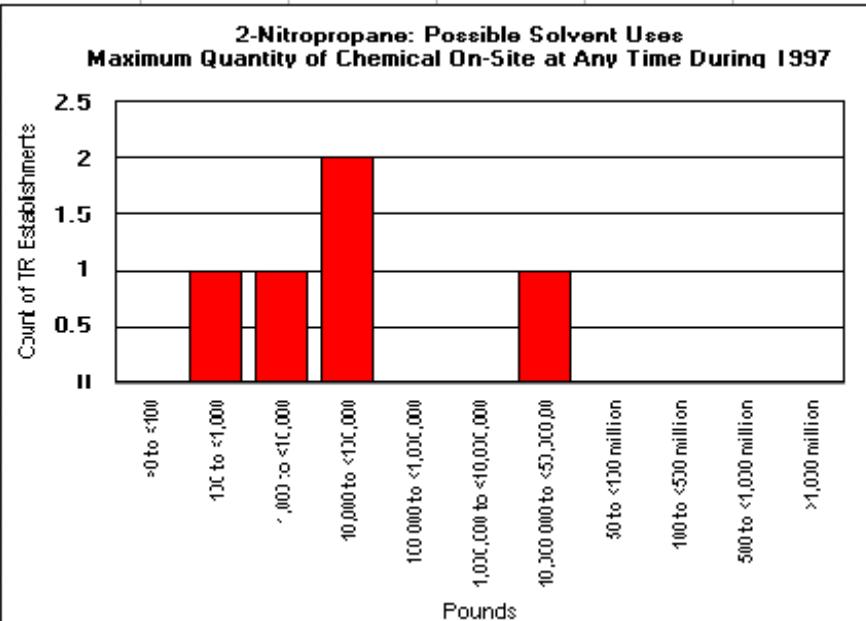
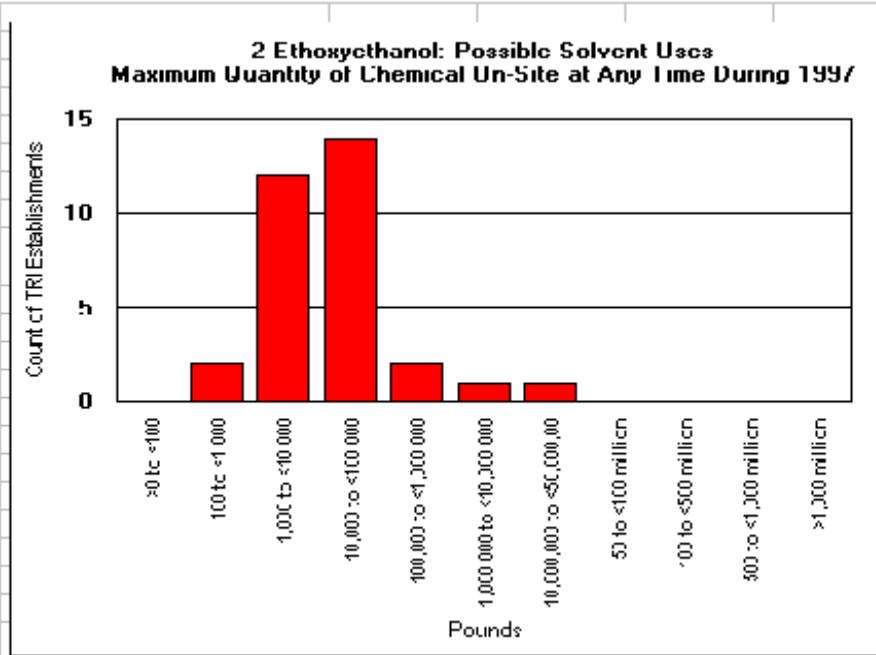
4. USEPA Office of Environmental Information Toxics Release Inventory (TRI)

Database Query Findings

1999 USEPA Toxics Release Inventory (TRI) Customized Data Query: Count of Facilities Managing Wastewaters Containing the Four Solvent Chemicals						
Disaggregation Subset Facilities	Metric	Solvent Chemicals (RCRA F-listed solvents)				
		1,1,2-TCE	Benzene	2-Ethoxy	2-Nitro	
I. REPORTING: Facilities which use, process or manufacture the chemical	TRI facility count	35	979	46	6	
	TRI establishment count	106	2,770	108	18	
II. SOLVENT USE: Facilities which <u>may</u> use the chemical as a solvent	TRI establishment count	22	437	32	5	
III. RELEASES: Facilities which released the chemical to land, air, or water	TRI establishment count (>0 lbs)	71	1,861	88	12	
	TRI establishments with RCRA IDs	38 (54%)	488 (26%)	43 (49%)	6 (50%)	
IV. WASTE-WATERS*: Facilities reporting chemical present in wastewaters (WWs)	Reported chemical in wastewater (WW)	Facilities	19 (54%)	390 (40%)	7 (15%)	3 (50%)
		States	9	48	7	3
	Onsite WW management**	Facilities	16	345	7	3
		Establishments	93	1,611	25	9
		Pounds***	Not available from Envirofacts website			
		Onsite WW treatment**** (TRI code = B11 to C99)	Facilities	12	198	5
		Establishments	21	314	9	4
		Pounds***	Not available from Envirofacts website			
	Offsite Transfer WW to POTW (TRI code = P91)	Facilities	1	60	1	0
		Establishments	1	60	1	0
		Pounds***	1,522	208,765	858,000	0
	Transfer WW to other offsite treatment (TRI code = M61 + M62)	Facilities	2	41	2	0
		Establishments	2	45	3	0
		Pounds***	58,009	141,063	885	0

Explanatory Notes:

- (a) Source: USEPA Envirofacts website queries of the 1999 "Toxics Release Inventory" (TRI) database <http://www.epa.gov/enviro/html/tris/adhoc.html>
- (b) * Wastewater: aqueous waste with less than 50% organic liquid content; excludes slurries and sludges containing water with appreciable amounts of dissolved or settled solids, such that the viscosity or density of the waste is considerably different from process wastewater.
- (c) ** Other "management" methods include incineration/thermal treatment methods (TRI onsite waste treatment codes Fxx), and physical treatment methods such as equalization, filtration, settling/clarification, carbon adsorption, air stripping, steam stripping (TRI onsite waste treatment codes Pxx).
- (d) *** Pounds of the chemical constituent only, not of the entire wastewater volume.
- (e) **** "Treatment" here represents the subset of WW treated with either biological treatment (TRI onsite waste treatment codes Bxx), or chemical treatment (TRI onsite waste treatment codes Cxx).
- (f) TRI database reporting thresholds:
 - ! Facilities in manufacturing SIC codes 20-39 + coal & metal mining + electric utilities + chemical wholesalers + petroleum bulk terminals + hazardous waste management services:
 - ! >12.5 tons (25,000 lbs) of the chemical manufactured or processed, or >5 tons (10,000 lbs) used during one year.
- (g) Facility: all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person.
- (h) Establishment: distinct and separate economic activities that are performed at a single physical location; there may be more than one establishment per facility (i.e. multi-establishment facilities consist of two or more distinct and separate economic units).



Six of the 13 TRI Database Chemical Activities Listed Below are Potential "Solvent" Use Categories:

(1) Used/Processed; (2) Formulation Component; (3) Article Component; (4) Chem Processing Aid; (5) Manufacture Aid; (6) Ancillary.

Selection of Tables/Columns for Query Engine - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

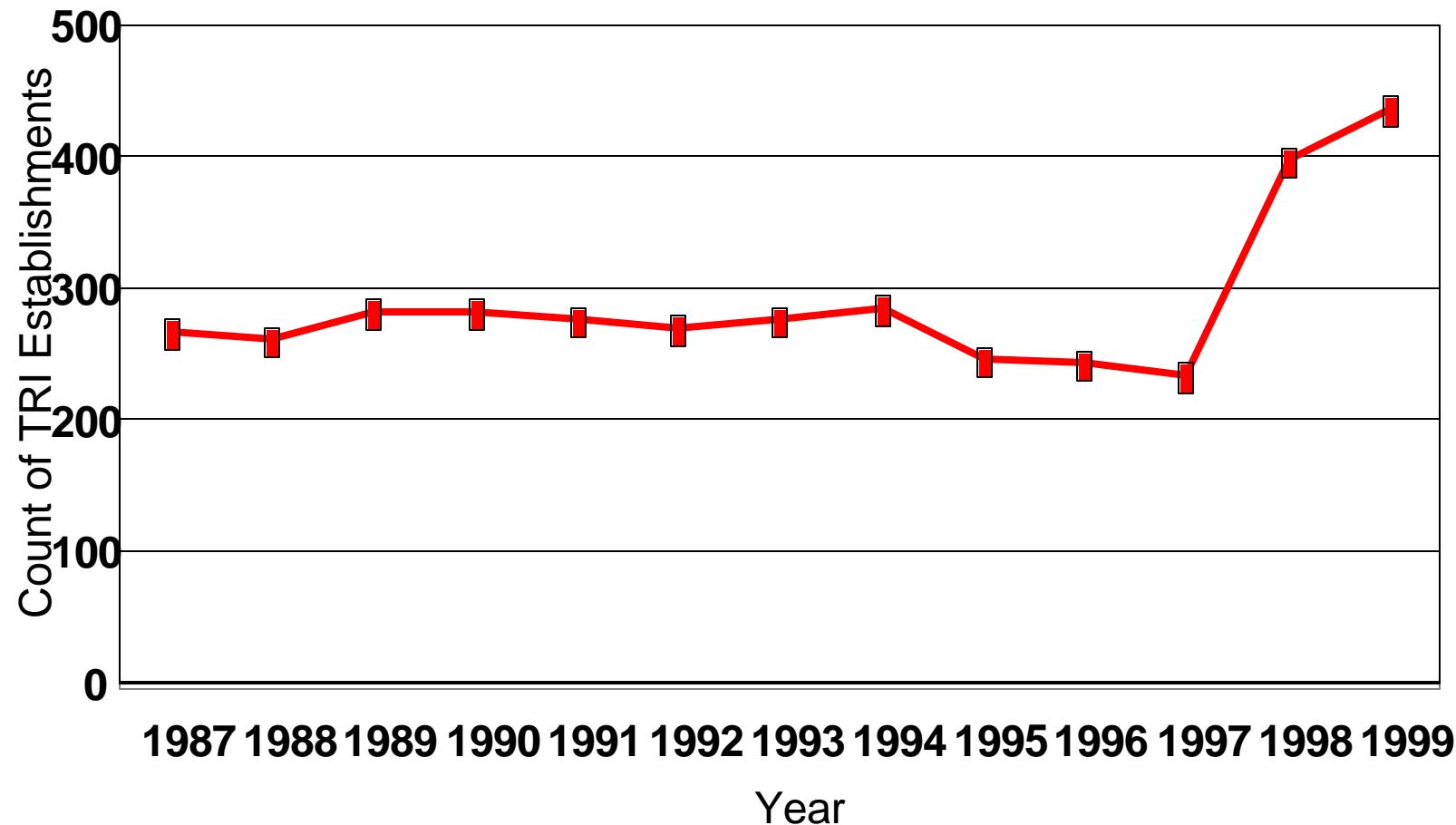
Bookmarks Netsite: http://oaspub.epa.gov/enviro/ad_hoc_table_column_select.retrieval_list What's Related

Internet Lookup New&Cool

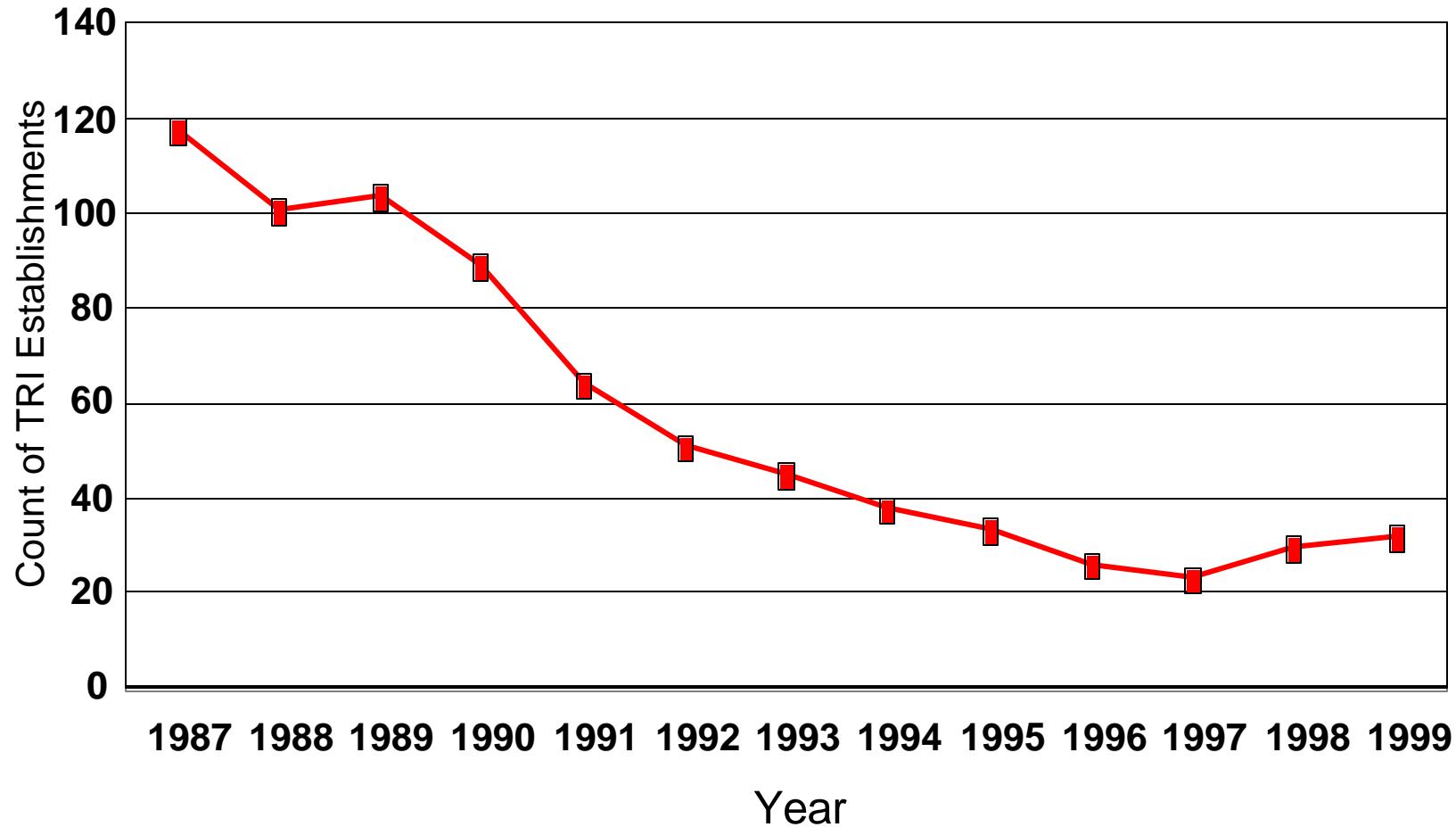
<input type="checkbox"/> Produce	Indicator that shows whether the facility produces the reported chemical.
<input type="checkbox"/> Imported	Indicator that shows whether the facility imports the reported chemical into the Customs Territory of the United States.
<input type="checkbox"/> Used Processed	Indicator that shows whether the facility produces or imports, then further processes or otherwise uses, the chemical reported.
<input type="checkbox"/> Sale Distribution	Indicator that shows whether the facility produces or imports specifically for sale or distribution the chemical reported.
<input type="checkbox"/> Byproduct	Indicator that shows whether the facility produces the reported chemical coincidentally during the production, processing, otherwise use, or disposal of another chemical substance or mixture, and, following its production, is separated from that other chemical substance or mixture.
<input type="checkbox"/> Impurity	Indicator that shows whether the facility produces the reported chemical as a result of the manufacture, processing, or otherwise use of another chemical, but does not separate and remains primarily in the mixture or product with that other chemical.
<input type="checkbox"/> Reactant	Indicator that shows whether the facility uses the chemical reported in chemical reactions for the manufacture of other chemical substances or products.
<input type="checkbox"/> Formulation Component	Indicator that shows whether the facility adds the reported chemical to a product or product mixture prior to further distribution of that product to act as a performance enhancer during the use of the product.
<input type="checkbox"/> Article Component	Indicator that shows whether the facility uses the reported chemical as an integral component of an article distributed for industrial, trade, or consumer use.
<input type="checkbox"/> Repacking	Indicator that shows whether a facility processes or prepares a reported chemical for distribution in commerce in a different form, state, or quantity.
<input type="checkbox"/> Chem Processing Aid	Indicator that shows whether a facility adds a reported chemical to a reaction mixture or synthesis of another chemical substance, without intending it to remain as a part of the mixture.
<input type="checkbox"/> Manufacture Aid	Indicator that shows whether the facility uses the reported chemical to aid the manufacturing process, without intending it to become part of the resulting product or the reaction mixture, during the manufacture or synthesis of another chemical substance.
<input type="checkbox"/> Ancillary	Indicator that shows whether the facility uses the reported chemical for purposes other than aiding chemical processing or manufacturing.

Document: Done

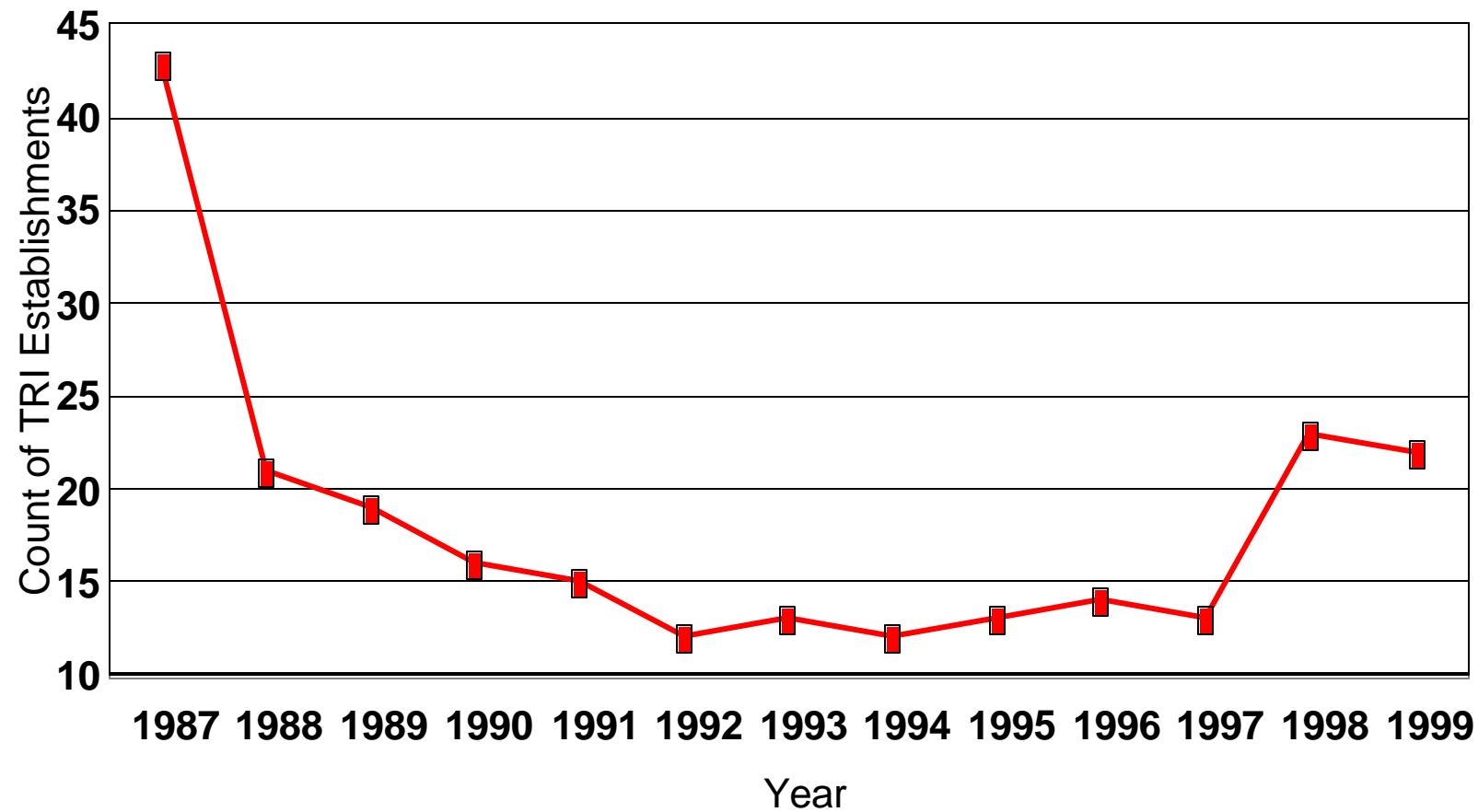
Benzene: 13-Year Trend in Solvent Use (6 Possible Sources)
TRI facilities using >10,000 pounds/year; ~2 drums/



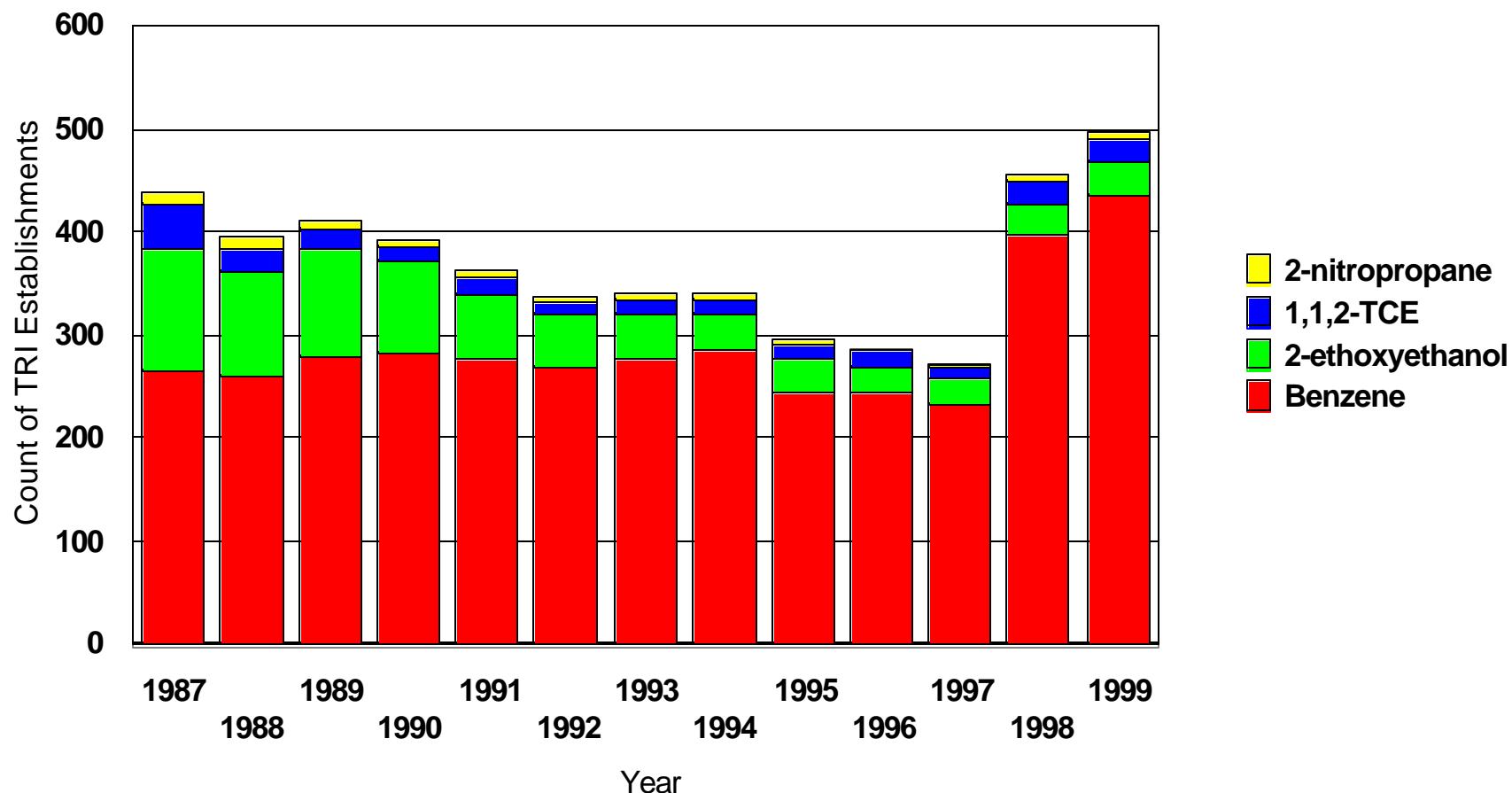
2-Ethoxyethanol: 13-Year Trend in Solvent Use (6 Possible Solvents)
TRI facilities using >10,000 pounds/year; ~2 drums/month equivalent



**1,1,2-Trichloroethane: 13-Year Trend in Solvent Use (6 Possible
TRI facilities using >10,000 pounds/year; ~2 drums/month)**



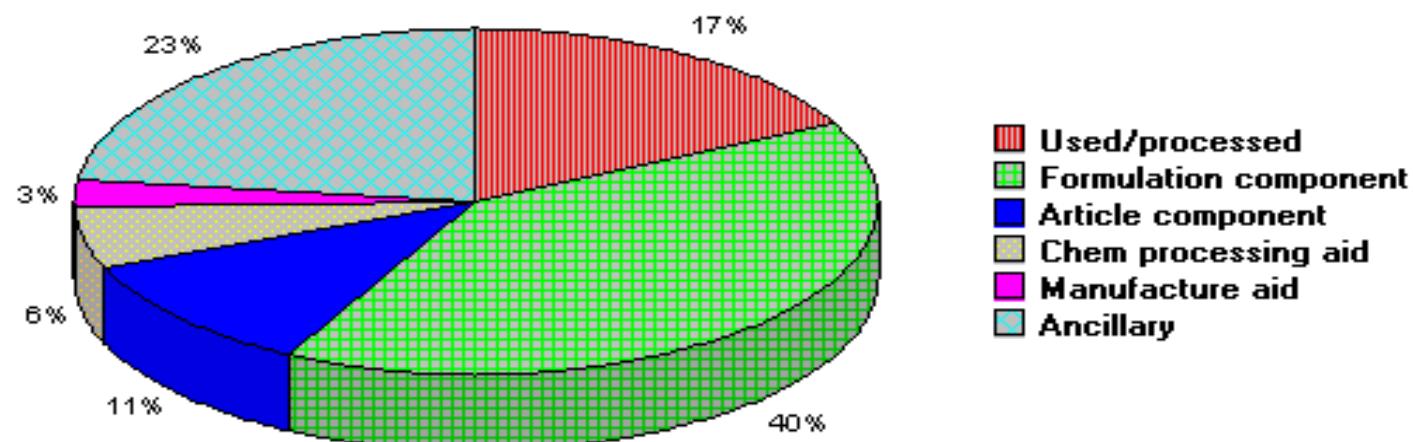
**13-Year Trend in Solvent Use (Six Possible Solvent Use Categories*)
(TRI facilities using >10,000 pounds/year; ~2 drums/month equivalency)**



* Possible solvent uses include: used/processed; performance enhancer formulation component; integral component of article; chemical processing aid; manufacturing aid; and/or ancillary use.

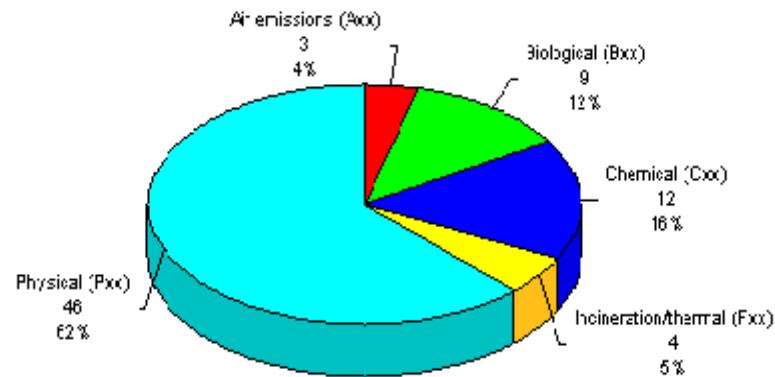
1999 US EPA TRI		Benzene	2-ethoxy-	112-TCE	2-nitro-	Row totals	%
			ethanol		propane		
Count of solvent use establishmen		437	32	22	5	496	
Item	Possible solvent uses						
1	Used/processed	103	4	5	1	113	17%
2	Formulation component	250	8	1	1	260	40%
3	Article component	72	0	0	0	72	11%
4	Chem processing aid	28	5	3	0	36	6%
5	Manufacture aid	12	6	0	0	18	3%
6	Ancillary	112	17	15	4	148	23%
	Column totals =	577	40	24	6	647	100%

Six Solvent Use Categories (1999 TRI)
Based on 496 establishment uses of benzene, 2-ethoxyethanol, 112-TCE or 2-nitropropane



1,1,2-Trichloroethane in Industrial Wastewaters

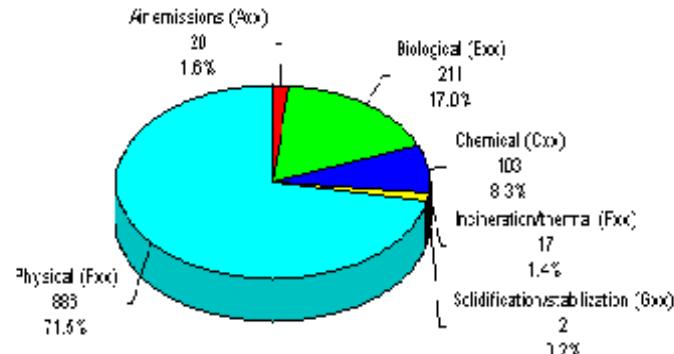
On-Site Wastewater Treatment Train (1999 TRI; 16 facilities; 74 treatment steps)



Note: Treatment methods applied to single source wastewaters and multi-source commingled wastewaters

Benzene in Industrial Wastewaters

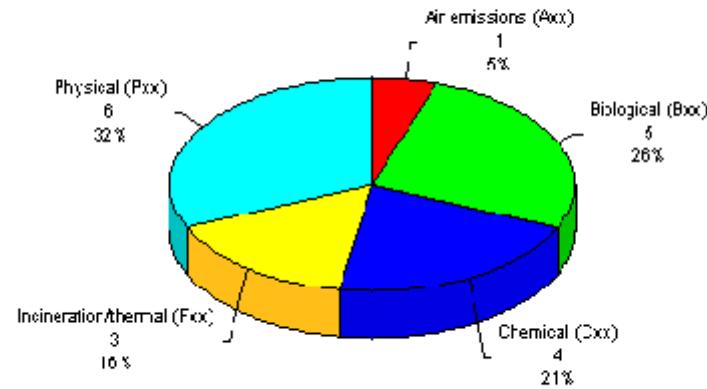
On-Site Wastewater Treatment Train (1999 TRI; 345 facilities, 1,239 steps)



Note: Treatment methods applied to single source wastewaters and multi-source commingled wastewaters

2-Ethoxyethanol in Industrial Wastewaters

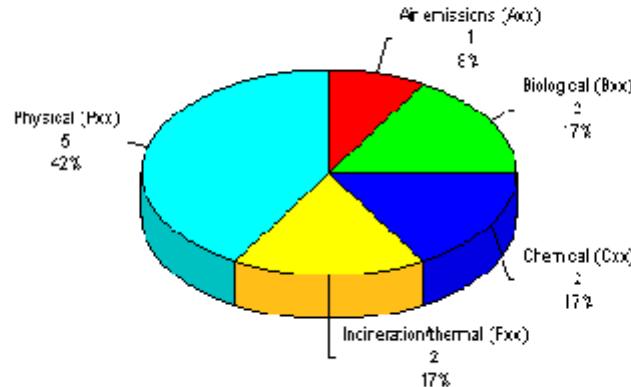
On-Site Wastewater Treatment Train (1999 TRI; 7 facilities; 15 steps)



Note: Treatment methods applied to single source wastewaters and multi-source commingled wastewaters

2-Nitropropane in Industrial Wastewaters

On-Site Wastewater Treatment Train (1999 TRI; 3 facilities; 12 steps)



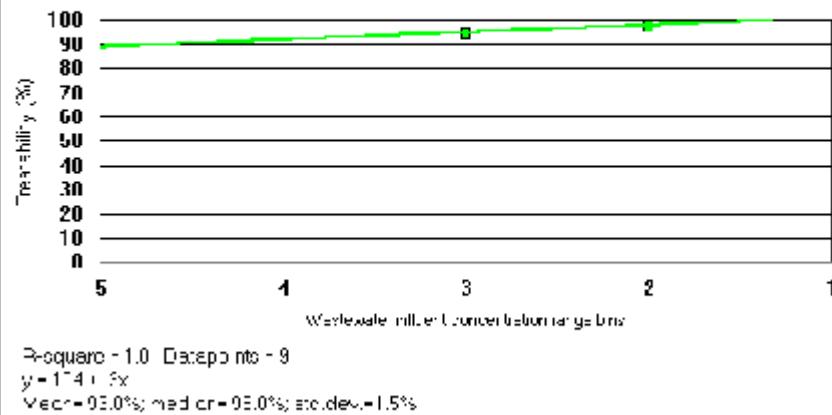
Note: Treatment methods applied to single source wastewaters and multi-source commingled wastewaters

Industrial Wastewater Treatability Data for the Four Headworks Exemption Candidate Chemicals

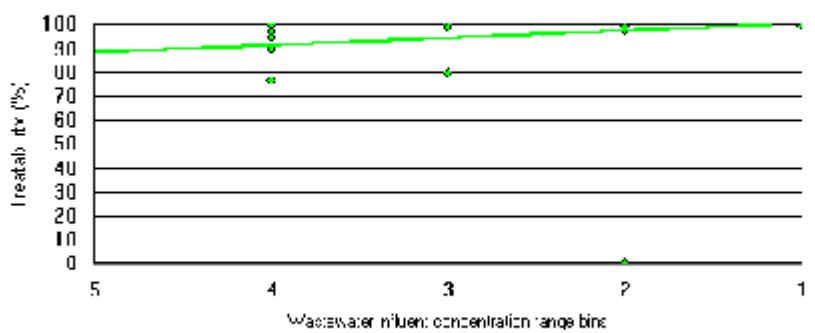
Treatability Using Biological, Chemical, and Physical Treatment Methods

(source: USEPA 1999 Toxics Release Inventory, Section 7A)

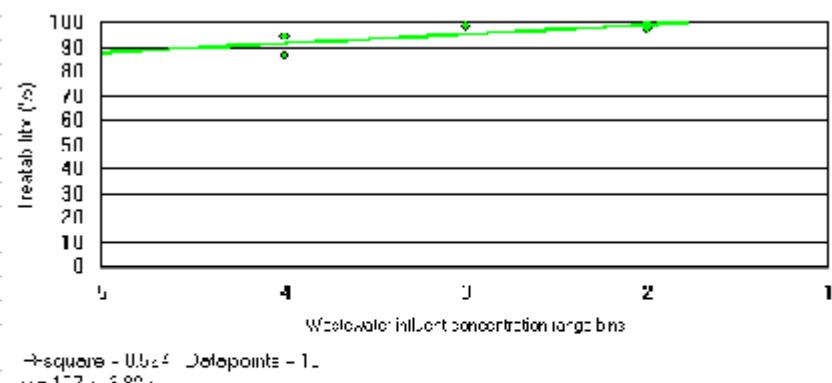
2-Nitropropane: On-Site Treatability in Industrial Wastewaters



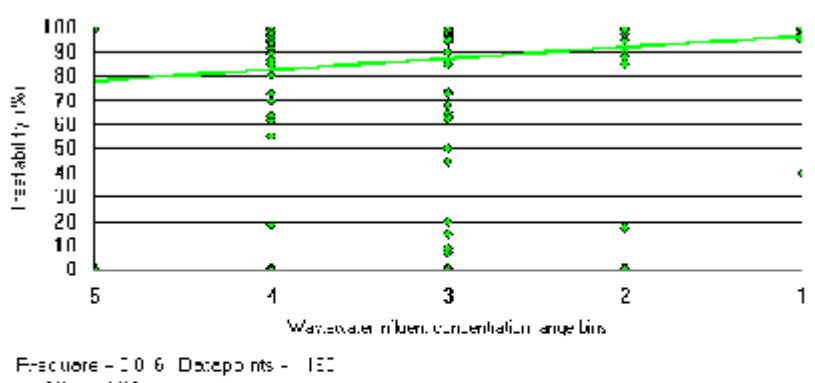
1,1,2-Trichloroethane: On-Site Treatability in Industrial Wastewaters



2-Ethoxyethanol: On-Site Treatability in Industrial Wastewaters



Benzene: On-Site Treatability in Industrial Wastewaters



Explanatory Notes:

- (a) Treatability = percent destruction, deodorization, conversion or removal of the particular chemical mass from the wastewater stream (influent) compared to effluent concentration.
- (b) influent concentration ranges: bin#1: >10,000 ppm; bin#2: 1,000 to 10,000 ppm; bin#3: 1 to 1,000 ppm; bin#4: 0.01 to 100 ppm; bin#5: <100 ppm
- (c) Data points <100% may represent misplaced decimal points in facilities reporting Section 7A treatment efficiency percentages on the TRI reporting form (e.g. a data entry of 0.98 may actually represent 98%).
- (d) Treatability can reflect the overall removal of the chemical from a given industrial wastewater stream, regardless of whether a single method actually removes the chemical.
- (e) Wastewaters defined in the TRI definition as "a mixture of water and organic liquids and/or organic materials, less than 5% aqueous" (EPA 74-F-1F-001, Feb 1998, p. 36).
- (f) USEPA TRI database query website: <http://www.epa.gov/enviro/html/tris/edbs.html>

USEPA/EPAWRF-JG/W-EMRAE 06/14/02

Summary of On-site Treatability for Candidate "Headworks" Spent Solvent Chemicals in Industrial Wastewaters

Source: USEPA 1999 Toxics Release Inventory (TRI) Section 7A

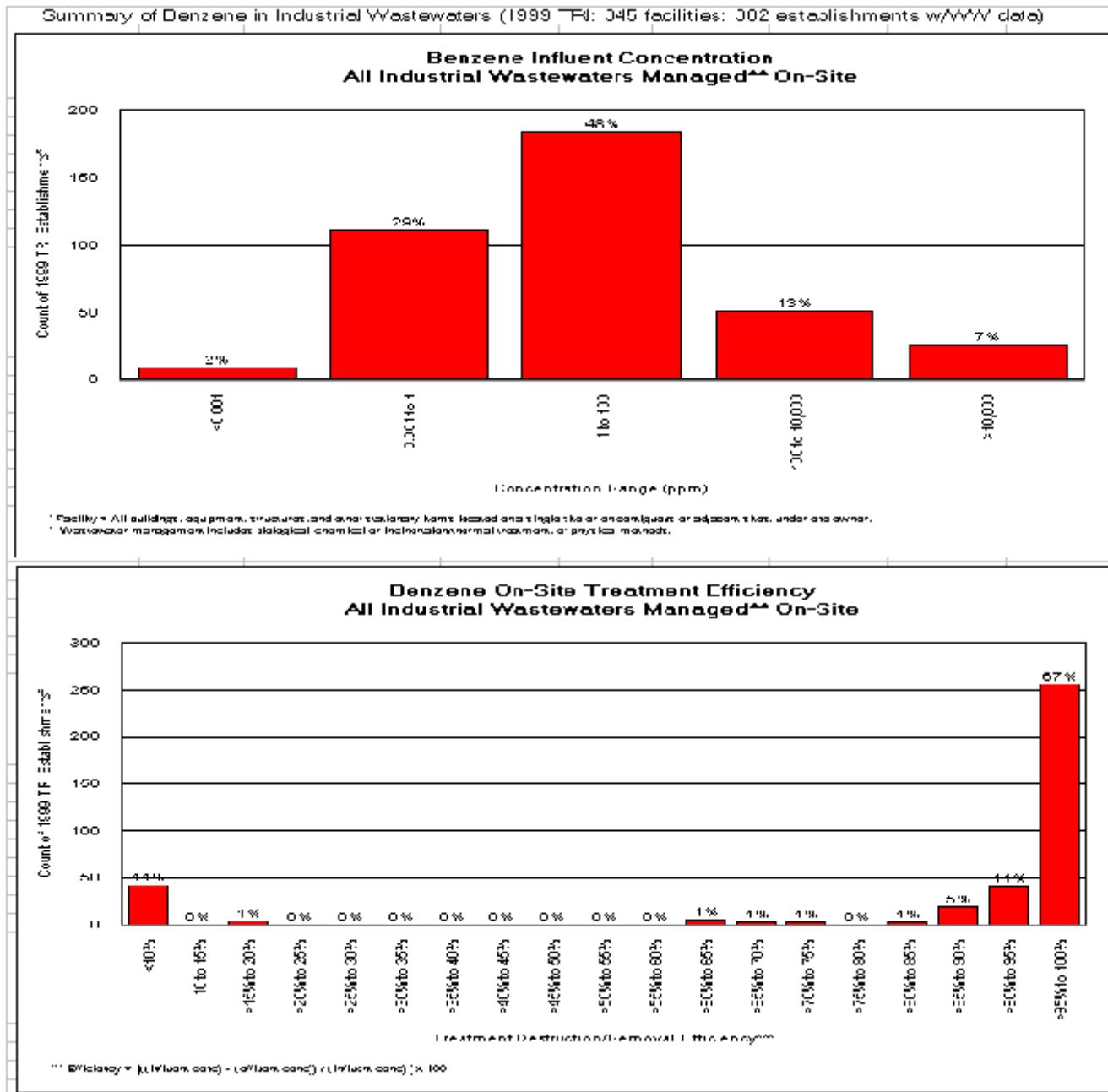
Item	TRI Treatment Code	Type of On-Site Wastewater Treatment Method	2-NITROPROPANE			1,1,2-TCA			2-ETHOXYETHANOL			BENZENE						
			Wastestreams w/data =		3	Wastestreams w/data =		18	Wastestreams w/data =		7	Wastestreams w/data =		382				
			Data points	Treatability %*		Data points	Treatability %*		Data points	Treatability %*		Data points	Treatability %*					
				Min	Max		Min	Max		Min	Max		Min	Max				
1	B11	Biological treatment -- aerobic	1			95.0	8	77.0	100.0	98.7	4	86.7	100.0	97.0	182	0.0	100.0	99.5
2	B21	Biological treatment -- anaerobic								1			100.0	7	0.0	100.0	100.0	
3	B31	Biological treatment -- facultative	1			95.0	1			80.0				9	0.0	100.0	99.0	
4	B99	Biological treatment -- other												13	0.0	100.0	99.0	
5	C01	Chemical treatment -- chemical precipitation -- lime or sodium hydroxide												4	0.0	99.7	97.0	
6	C09	Chemical treatment -- sulfide					1			97.5				7	0.0	100.0	97.0	
7	C11	Chemical treatment -- neutralization	2	95.0	98.0	96.5	10	0.0	100.0	97.8	3	86.7	98.0	95.0	67	0.0	100.0	99.0
8	C21	Chemical treatment -- chromium reduction												1			100.0	
9	C41	Chemical treatment -- cyanide oxidation -- alkaline chlorination												1			99.0	
10	C43	Chemical treatment -- cyanide oxidation -- other												2	99.0	99.0	99.0	
11	C44	Chemical treatment -- general oxidation (including disinfection) -- chlorination									1			95.0	3	0.3	100.0	95.0
12	C45	Chemical treatment -- general oxidation (including disinfection) -- ozonation												1			100.0	
13	C46	Chemical treatment -- general oxidation (including disinfection) -- other					1			99.0				7	97.8	100.0	99.0	
14	C99	Chemical treatment -- other												10	0.3	100.0	99.0	
15	P01	Physical treatment -- equalization	1			95.0	6	77.0	100.0	98.7	2	86.7	95.0	90.9	124	0.0	100.0	99.0
16	P09	Physical treatment -- other blending												7	0.0	100.0	100.0	
17	P11	Physical treatment -- settling/clarification	1			95.0	10	77.0	100.0	99.6	2	86.7	95.0	90.9	149	0.0	100.0	99.0
18	P12	Physical treatment -- filtration	2	95.0	98.0	96.5	6	77.0	100.0	99.0	1			98.0	67	0.0	100.0	99.0
19	P13	Physical treatment -- sludge dewatering (non-thermal)					3	80.0	100.0	97.5				34	0.0	100.0	99.0	
20	P14	Physical treatment -- air flotation					1			90.0				92	0.0	100.0	99.0	
21	P15	Physical treatment -- oil skimming												171	0.0	100.0	99.0	

Item	TRI Treatment Code	Type of On-Site Wastewater Treatment Method	2-NITROPROPANE			1,1,2-TCA			2-ETHOXYETHANOL			BENZENE					
			Wastestreams w/data =		3	Wastestreams w/data =		18	Wastestreams w/data =		7	Wastestreams w/data =		382			
			Data points	Treatability %*			Data points	Treatability %*			Data points	Treatability %*					
				Min	Max	Median		Min	Max	Median		Min	Max	Median			
22	P16	Physical treatment -- emulsion breaking -- thermal											5	85.0	100.0	99.0	
23	P17	Physical treatment -- emulsion breaking -- chemical											15	0.0	100.0	99.0	
24	P19	Physical treatment -- other liquid phase separation											24	0.0	100.0	99.0	
25	P21	Physical treatment -- adsorption -- carbon	1			98.0	5	97.5	100.0	99.0	1		98.0	65	0.0	100.0	99.0
26	P29	Physical treatment -- adsorption -- other											1			93.3	
27	P41	Physical treatment -- stripping -- air					6	77.0	100.0	97.1				67	0.0	100.0	98.0
28	P42	Physical treatment -- stripping -- steam					8	77.0	100.0	99.5				50	0.0	100.0	99.0
29	P49	Physical treatment -- stripping -- other											7	73.1	100.0	99.0	
30	P61	Physical treatment -- solvent extraction (other than recovery/reuse)											2	0.5	99.0	49.8	
31	P99	Physical treatment -- other physical treatment					1			100.0				6	95.0	100.0	99.5
Column median =					95.0				98.7				96.0			99.0	
Total data points =			9			67				15			1200				

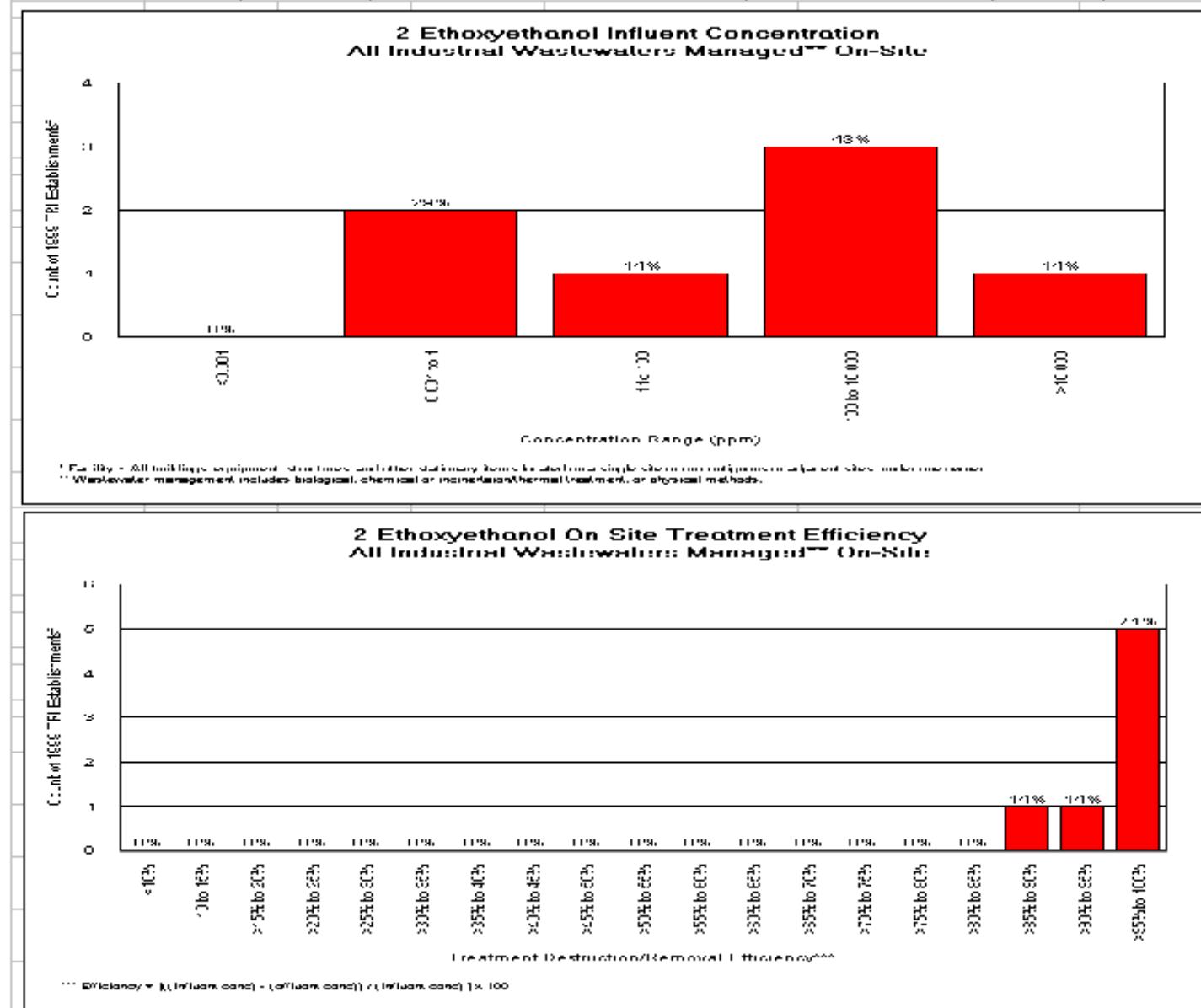
Explanatory Notes:

- (a) * Treatability % = percent destruction, degradation, conversion or removal of the particular chemical mass from the wastestream (influent compared to effluent concentrations).
- (b) Datapoints <1.0% may represent misplaced decimal points in facilities reporting Section 7A treatment efficiency percentages on the TRI reporting form (e.g. a data entry of 0.98 may actually represent 98%).
- (c) Treatability can reflect the overall removal of the chemical from sequential treatment methods (treatment train) applied to the wastestream, regardless of whether a single method actually removes the chemical.
- (d) Wastewaters defined in the TRI database as "a mixture of water and organic liquid and the organic content is less than 50 percent" (EPA-745-K-98-001, Feb 1998, p.36).
- (e) USEPA TRI database query website: <http://www.epa.gov/enviro/html/tris/adhoc.html>.

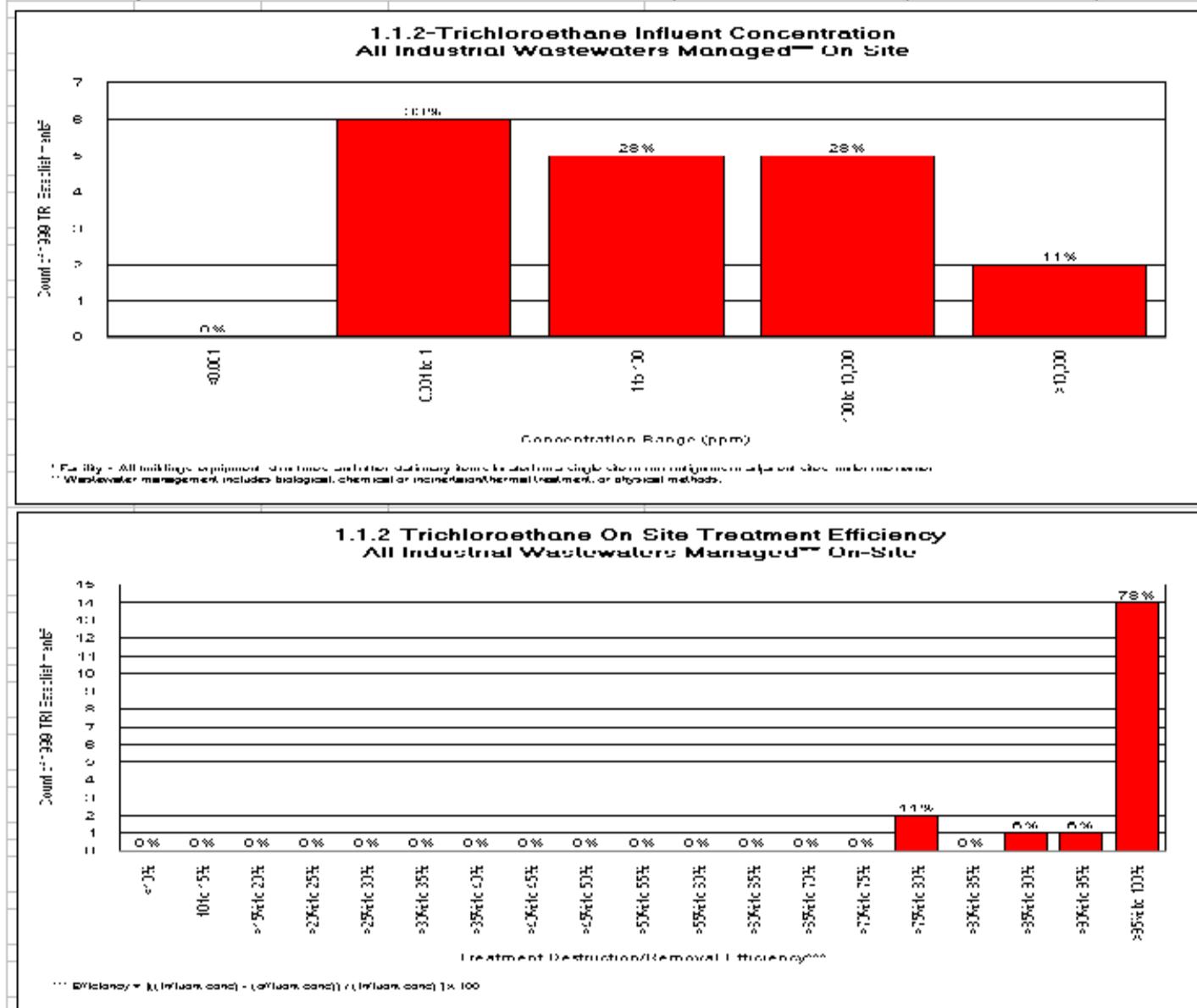
Summary of Benzene in Industrial Wastewaters (1999 TFI: 345 facilities; 302 establishments w/WWY data)

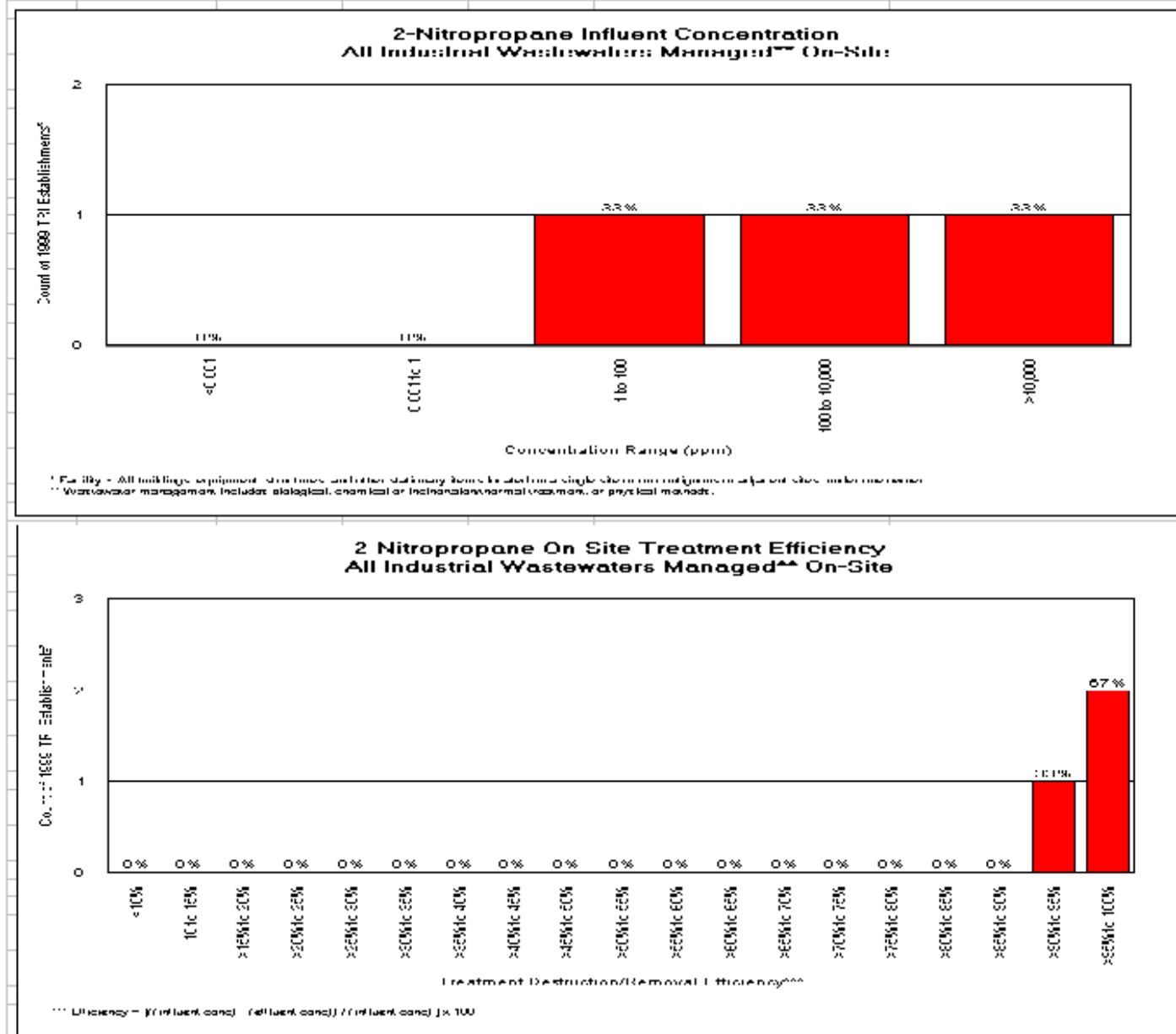


Summary of 2-Ethoxyethanol in Industrial Wastewaters (1999 TRI - Z treatments w/WW data)



Summary of 1,1,2-Trichloroethane in Industrial Wastewaters (1998 TRI, 18 facilities (18 installations) w/WWTR)





Generation of Waste Due to Catastrophic or One Time Events

Definition:

The total amount (in pounds) of the toxic chemical released directly to the environment or sent off-site for recycling, energy recovery, treatment, or disposal during the reporting year, due to remedial actions, catastrophic events such as earthquakes or floods, and one-time events not associated with normal or routine production processes. Source: USEPA Toxics Release Inventory (TRI) Database (<http://www.epa.gov/triexplorer/chemical.htm>)

Item	Year	Benzene	2-Ethoxy-ethanol	2-Nitro-propane	1,1,2-Tri-chloro-ethane
		(pounds)	(pounds)	(pounds)	(pounds)
1	1991	108,578	79,509	0	3,629
2	1992	122,488	34,810	0	40
3	1993	140,237	151,727	0	210
4	1994	207,558	99,636	0	2,676
5	1995	65,951	36,526	0	481
6	1996	158,478	20,424	0	772
7	1997	42,672	16,237	0	10,206
8	1998	86,711	10,515	0	48
9	1999	90,637	10	0	892
10	2000	41,908	0	0	159

Statistical Summary:

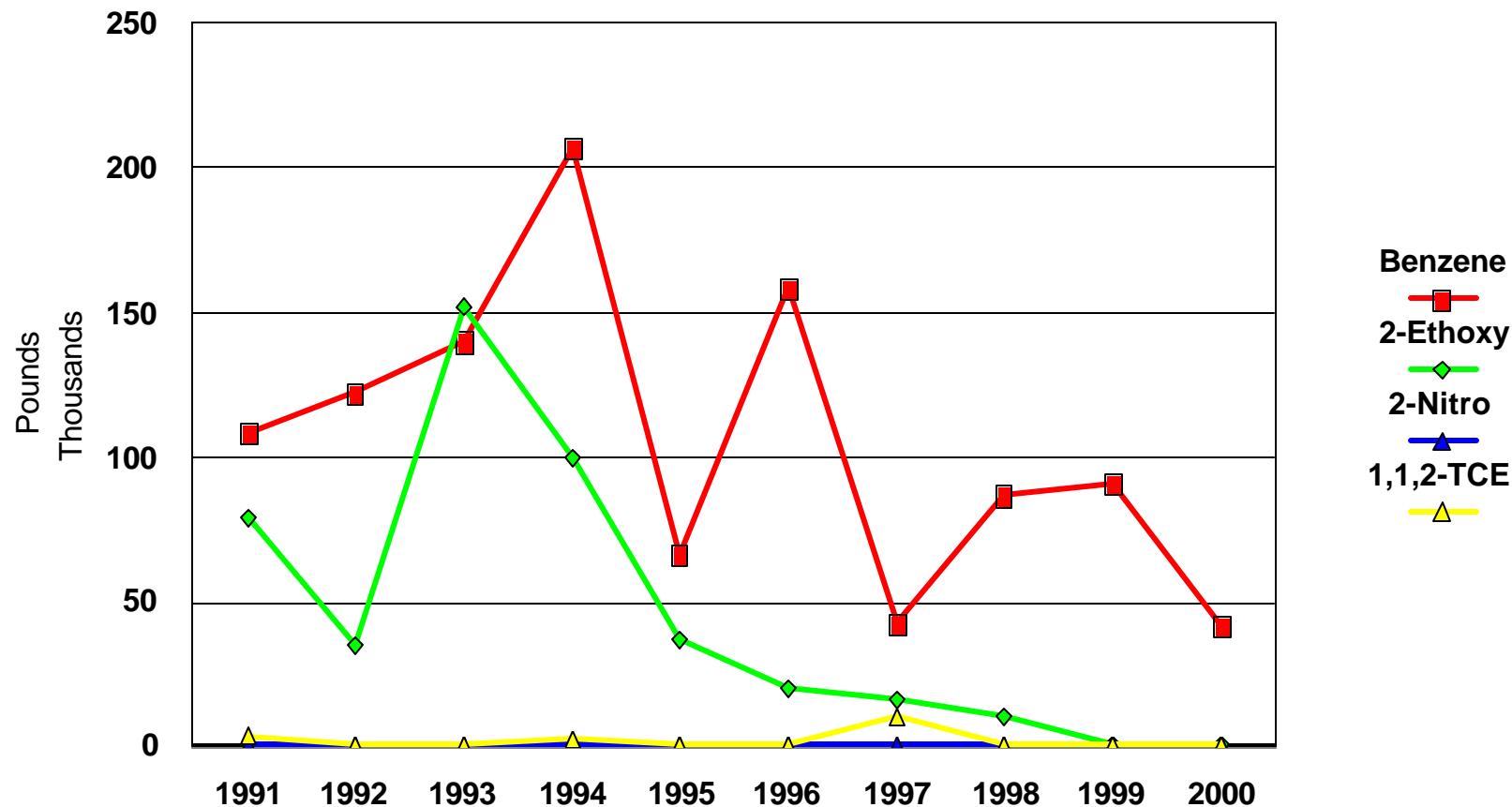
A. Pounds per year:

Mean (average) =	106,522	44,939	0	1,911
Median =	99,608	27,617	0	627

B. Tons per year equivalency (2,000 pounds per short-ton conversion factor):

Mean (average) =	53.3	22.5	0.0	1.0
Median =	49.8	13.8	0.0	0.3

Waste Due to Catastrophic or One-Time Events: Four Headworks Solvents
Source: 10-Year Trends Based on USEPA Toxics Release Inventory (TRI) Database



Source: USEPA Toxics Release Inventory (TRI) Database (<http://www.epa.gov/triexplorer/chemical.htm>)

**5. USEPA Office of Solid Waste
1996 National Hazardous Waste Constituent Survey
(NHWCS)**

Database Query Findings

NHWCS Database Query #1 of 2:

(a) F002 & F005 wastecodes; (b) four chemicals only; (c) no other RCRA-listed wastecode restrictions.

Physical Form Summary of F002 or F005 Wastestreams Represented in OSW's 1996 NHWCS Database (which benchmarked waste quantities to 1993 BRS)							
Item	BRS physical form code	Unambiguous wastewater (WW) or wastewater sludge?	BRS physical form code definition	Count of 4-digit SIC codes (industries)	Count of NHWCS facilities reporting	Count of NHWCS waste streams	NHWCS waste quantity (1993 tons)
1	????		F002 or F005 waste physical form code not reported in NHWCS	23	16	77	3,966,953.6
Liquids (if B1xx to B2xx)							
2	B101	Wastewater	Aqueous wastes with low solvents	6	6	7	34,446,872.4
3	B102	Wastewater	Aqueous wastes with low other toxic organics	2	3	3	2,560,442.1
4	B114	Wastewater	Other aqueous waste with low dissolved solids	1	1	3	359,214.8
5	B115	Wastewater	Scrubber water	3	5	6	4,804,406.0
6	B116	Wastewater	Leachate	1	1	1	9,808.2
7	B119		Other inorganic liquids n.e.c.	2	2	2	9,088,166.1
8	B201		Concentrated solvent-water solution	5	5	10	10,870.7
9	B202		Halogenated (e.g. chlorinated) solvent	21	12	31	92,968.4
10	B203		Nonhalogenated solvent	22	22	49	186,752.9
11	B204		Halogenated/nonhalogenated solvent mixture	42	38	184	578,675.7
12	B205		Oil-water emulsion or mixture	2	2	2	5,182.1
13	B206		Waste oil	1	1	1	4,062.3
14	B207		Concentrated aqueous solution of other organics	3	3	3	101,961.1
15	B209		Organic paint, ink, lacquer, or varnish	5	4	7	2,550.0
16	B210		Adhesives or epoxies	0	1	1	27.8
17	B211		Paint thinner or petroleum distillates	7	5	13	44,301.2
18	B212		Reactive or polymerizable organic liquid	1	1	1	1,528.5
19	B219		Other organic liquids n.e.c.	19	12	33	3,919,523.9
			Subtotal =	67	77	357	56,217,314.0
			Wastewater subtotal (represents unambiguous "lower-bound" estimate) =				42,180,743.4
Solids (if B3xx to B4xx)							
20	B301		Soil contaminated with organics	12	11	19	67,009.3
21	B302		Soil contaminated with inorganics only	1	1	1	1,575.0
22	B303		Ash, slag, or other residue from waste incineration	4	8	18	73,438.9
23	B306		Dry lime or metal hydroxid solids not "fixed"	1	1	1	580.0
24	B310		Spent solid filters or adsorbents	2	3	3	7,284.1
25	B312		Metal-cyanide salts/chemicals	1	1	1	1,070.0
26	B319		Other waste inorganic solids n.e.c.	3	4	4	8,379.5

Item	BRS physical form code	Unambiguous wastewater (WW) or wastewater sludge?	BRS physical form code definition	Count of 4-digit SIC codes (industries)	Count of NHWCS facilities reporting	Count of NHWCS waste streams	NHWCS waste quantity (1993 tons)
27	B407		Other halogenated organic solids n.e.c.	7	6	12	31,484.7
28	B409		Other nonhalogenated organic solids n.e.c.	8	7	15	24,006.0
			Subtotal =	26	28	74	214,827.4

SLUDGES (if B5xx to B6xx)

29	B501		Lime sludge without metals	1	1	1	1,506.4
30	B503	WW sludge	Wastewater treatment sludge with toxic organics	2	2	2	149,861.4
31	B504	WW sludge	Other wastewater treatment sludge	1	1	1	3,961.2
32	B505		Untreated plating sludge without cyanides	1	1	1	3,039.8
33	B506		Untreated plating sludge with cyanides	1	1	1	3,039.8
34	B511		Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)	1	1	1	4,703.1
35	B601		Still bottoms of halogenated solvents or other organic liquids	2	2	2	1,527.5
36	B603		Oily sludge	2	3	3	5,155.1
37	B604		Organic paint or ink sludge	2	2	2	1,665.9
38	B606		Resins, tars, or tarry sludge	2	3	3	2,542.5
39	B607	WW sludge	Biological treatment sludge	3	4	5	51,190.7
40	B609		Other organic sludges n.e.c.	3	2	3	4,078.9
			Subtotal =	14	17	25	232,272.4
			Wastewater sludge subtotal (represents unambiguous "lower-bound" estimate) =				205,013.4
			Non-duplicative totals =	82	103	533	56,664,413.9

NHWCS Database Query #1 of 2: Continued

Summary of NHWCS Database Query Findings: F002 or F005 Spent Solvent RCRA Hazardous Wastestreams With Benzene, 1,1,2-Trichloroethane, 2-Ethoxyethanol, or 2-Nitropropane Source: OSW National Hazardous Waste Constituent Survey (NHWCS) Database																			
Data Summary Element	Subset of F002 or F005 Wastes Which Contain One or More of the Four Chemicals							Data Summary Element	Subset of F002 or F005 Wastes Which Contain One or More of the Four Chemicals										
	A	B	C	D	E	F	G		A	B	C	D	E	F	G				
	F002 or F005 facilities reporting measured* concentrations of 0 or >0ppm	% of All NHWCS F002 or F005 waste	F002 or F005 facilities reporting measured* >0ppm concentration	% of column A	Wholewaste Conc if >0ppm		Waste quantity weighted average (ppm)		F002 or F005 facilities reporting measured* concentrations of 0 or >0ppm	% of All NHWCS F002 or F005 waste	F002 or F005 facilities reporting measured* >0ppm concentration	% of column A	Wholewaste Conc if >0ppm		Waste quantity weighted average (ppm)				
2-NITROPROPANE (79-46-9)							Benzene (71-43-2)												
Count of 4-digit SIC industrial Operations Represented by Wastestreams							Count of 4-digit SIC industrial Operations Represented by Wastestreams												
Liquids	16	24%	10	63%				Liquids	32	48%	27	84%							
Solids	10	38%	5	50%				Solids	16	62%	8	50%							
Sludges	4	29%	2	50%				Sludges	10	71%	6	60%							
Subtotal	22	27%	14	64%				Subtotal	44	54%	32	73%							
Count of NHWCS facilities							Count of NHWCS facilities												
Liquids	13	17%	4	31%				Liquids	32	42%	24	75%							
Solids	11	39%	6	55%				Solids	17	61%	9	53%							
Sludges	5	29%	2	40%				Sludges	9	53%	5	56%							
Subtotal	22	21%	10	45%				Subtotal	42	41%	30	71%							
Count of NHWCS wastestreams							Count of NHWCS wastestreams												
Liquids	38	11%	16	42%				Liquids	92	26%	69	75%							
Solids	26	35%	16	62%				Solids	43	58%	22	51%							
Sludges	5	20%	2	40%				Sludges	15	60%	9	60%							
Subtotal	69	13%	34	49%				Subtotal	150	28%	100	67%							
1993 quantity (tons/year)							1993 quantity (tons/year)												
Liquids	4,193,758.6	7%	22,395.8	1%	5.00	25,000.0	1,955.4	Liquids	6,328,536.8	11%	1,185,393.9	19%	0.003	75,892.9	802.1				
Solids	113,519.3	53%	97,513.1	86%	0.08	21,000.0	213.8	Solids	149,580.5	70%	604,087.7	404%	0.00	5,000.0	64.6				
Sludges	12,334.1	5%	2,438.8	20%	50.00	5,000.0	3,151.4	Sludges	65,376.6	28%	74,811.0	114%	0.04	25,000.0	2,549.5				
Subtotal	4,319,612.1	8%	122,347.6	3%				Subtotal	6,543,493.9	12%	1,864,292.5	28%							

Data Summary Element	Subset of F002 or F005 Wastes Which Contain One or More of the Four Chemicals							Data Summary Element	Subset of F002 or F005 Wastes Which Contain One or More of the Four Chemicals									
	A	B	C	D	E	F	G		A	B	C	D	E	F	G			
	F002 or F005 facilities reporting measured* concentrations of 0 or >0ppm	% of All NHWCS F002 or F005 waste	F002 or F005 facilities reporting measured* >0ppm concentration	% of column A	Wholewaste Conc if >0ppm				F002 or F005 facilities reporting measured* concentrations of 0 or >0ppm	% of All NHWCS F002 or F005 waste	F002 or F005 facilities reporting measured* >0ppm concentration	% of column A	Wholewaste Conc if >0ppm					
					Min (ppm)	Max (ppm)	Waste quantity weighted average (ppm)						Min (ppm)	Max (ppm)	Waste quantity weighted average (ppm)			
2-Ethoxyethanol [Ethylene glycol monoethyl ether] (110-80-5)							1,1,2-Trichloroethane [Vinyl trichloride] (79-00-5)											
Count of 4-digit SIC industrial Operations Represented by Wastestreams							Count of 4-digit SIC industrial Operations Represented by Wastestreams											
Liquids	23	34%	20	87%				Liquids	23	34%	14	61%						
Solids	9	35%	7	78%				Solids	13	50%	10	77%						
Sludges	6	43%	4	67%				Sludges	8	57%	6	75%						
Subtotal	27	33%	24	89%				Subtotal	33	40%	22	67%						
Count of NHWCS facilities							Count of NHWCS facilities											
Liquids	17	22%	11	65%				Liquids	22	29%	11	50%						
Solids	12	43%	8	67%				Solids	14	50%	9	64%						
Sludges	6	35%	4	67%				Sludges	8	47%	5	63%						
Subtotal	25	24%	16	64%				Subtotal	30	29%	16	53%						
Count of NHWCS wastestreams							Count of NHWCS wastestreams											
Liquids	49	14%	29	59%				Liquids	50	14%	23	46%						
Solids	25	34%	18	72%				Solids	34	46%	25	74%						
Sludges	7	28%	4	57%				Sludges	10	40%	7	70%						
Subtotal	81	15%	51	63%				Subtotal	94	18%	55	59%						
1993 quantity (tons/year)							1993 quantity (tons/year)											
Liquids	4,219,778.8	8%	54,334.5	1%	2.50	50,595.2	9,918.8	Liquids	6,152,912.4	11%	1,021,591.9	17%	0.003	11,325.6	41.4			
Solids	109,566.7	51%	149,108.5	136%	0.08	75,000.0	373.7	Solids	135,515.9	63%	142,942.8	105%	0.003	8,854.2	659.8			
Sludges	14,058.9	6%	11,350.8	81%	1.65	25,000.0	16,428.3	Sludges	58,316.8	25%	61,085.5	105%	0.00	5,000.0	347.0			
Subtotal	4,343,404.4	8%	214,793.8	5%				Subtotal	6,346,745.1	11%	1,225,620.2	19%						

Explanatory Notes:

*Measured = Average concentrations (0ppm or >0ppm) based on either:

and based upon either:

- "Estimate" (if based on less than 5 samples)
- "Analysis" (if based on 5 or more samples).

- wholewaste concentration

- waste leaching procedure concentration

NHWCS Database Query #1 of 2: Continued

NHWCS Database Chemical Concentration Data for F002 & F005 RCRA Wastes Summary of 1996 NHWCS Database "Matched Pair" Findings: Same-facility liquid (treatment influent) Compared to sludge (treatment effluent residual)				
"Headworks" F002 or F005 solvent chemical	Nr. facilities with matched liquids & sludges in NHWCS	Subset nr. of apparent liquid & sludge matched facilities	Reported wholewaste total concentration of chemicals in liquid (ppm)	Reported wholewaste total concentration of chemicals in sludge (ppm)
2-Nitropropane	0	Not relevant	Not relevant	Not relevant
2-Ethoxyethanol	2	0	Not relevant	Not relevant
Benzene	4	2	500	0.013
			25,000 & 250	0.044
1,1,2-Trichloroethane	3	2	500	0.013
			250	0.033

Headworks Solvent Waste Facilities in the NHWCS (n=31)						
! IF CONSTITUENT CAS NR = 71-43-2 OR 110-80-5 OR 79-00-5 OR 79-46-9 ! IF WASTECODE = F002 OR F005, BUT NOT Kxxx, Uxxx, Pxxx ! IF CHEMMASS >0 (i.e. mass of chemical constituent in wastestream)						
ITEM	EPAID	FACNAME	CITY	STATE	ZIPCODE	1993 TONS/YR
1	ALD981019045	SYSTECH ENVIRONMENTAL CORPORATION	DEMOPOLIS	AL	367320000	5,852
2	ARD069748192	ENSCO INC	EL DORADO	AR	717300000	11
3	ARD089234884	EASTMAN CHEMICAL CO, ARK EASTMAN DIV	BATESVILLE	AR	72501	8,093
4	ARD981512270	ASH GROVE CEMENT FOREMAN	FOREMAN	AR	71836000	7,526
5	ILD010284248	CID RECYCLING & DISPOSAL FAC	CALUMET CITY	IL	604090000	804
6	ILD087157251	ENVIRONMENTAL WASTE RESOURCES	COAL CITY	IL	60416	4,148
7	IND001859032	RHONE-POULENC BASIC CHEMICALS CO	HAMMOND	IN	463200000	2,295
8	IND006050967	ELI LILLY & CO-TIPPECANOE	SHADELAND	IN	479050000	3,695
9	IND006419212	LONESTAR INDUSTRIES INC.	GREENCASTLE	IN	461350000	17,739
10	IND072040348	ELI LILLY & CO-CLINTON LABS	CLINTON	IN	478420000	2,083
11	IND078911146	CHEMICAL WASTE MANAGEMENT OF INDIANA INC	FORT WAYNE	IN	468060000	210
12	KSD980633259	SYSTECH ENVIRONMENTAL	FREDONIA	KS	667360000	8,702
13	LAD981057706	MARINE SHALE PROCESSORS	AMELIA	LA	703400000	28,846
14	MID000724831	MICHIGAN DISPOSAL	BELLEVILLE	MI	481110000	13,350
15	MID981200835	SYSTECH ENVIRONMENTAL CORP -LAFARGE CORP	ALPENA	MI	497070000	27,735
16	MND006172969	3M COTTAGE GROVE (CHEMOLITE)	COTTAGE GROVE	MN	550160000	3,814
17	NYD080469935	NORLITE CORPORATION	COHOES	NY	120470694	10,584
18	NYD980592497	EASTMAN KODAK COMPANY	ROCHESTER	NY	146526259	3,319
19	NYD986874501	INTERNATIONAL BUSINESS MACHINES CORP.	OWEGO	NY	138273998	445,193
20	OHD045243706	ENVIROSAFE SERVICES OF OHIO INC	OREGON	OH	43616	42,944
21	OHD093945293	CWM RESOURCE RECOVERY, INC.	WEST CARROLLTON	OH	45449	69
22	OKD065438376	U.S. POLL. CONTROL, INC.-LONE MOUNTAIN	WAYNOKA	OK	738609622	165,331
23	ORD089452353	CHEMICAL WASTE MANAGEMENT OF THE NW	ARLINGTON	OR	97812	680
24	SCD070375985	LAIDLAW ENV SVS OF SC INC	PINEWOOD	SC	291250000	143
25	TN3890090001	U.S. DOE Y-12 PLANT	OAK RIDGE	TN	37831	23,872
26	TND981920119	ALLWORTH OF TENNESSEE INC	MOUNT PLEASANT	TN	38474	218
27	TXD000838896	CHEMICAL WASTE MANAGEMENT INC	PORT ARTHUR	TX	77640000	10,978
28	TXD008076853	HUNTSMAN PETROCHEMICAL CORPORATION	CONROE	TX	773010000	2,092
29	UTD981552177	APTUS INC	ARAGONITE	UT	840290000	544
30	VAD042755082	SOLITE CORPORATION	ARVONIA	VA	230040068	32,761
31	VAD046970521	VIRGINIA SOLITE COMPANY	CASCADE	VA	240690000	32,339

Column total = 905,970

NHWCS Database Query #1 of 2: Continued

WASTE TREATMENT SYSTEM SUMMARY FOUR HEADWORKS SOLVENT CHEMICALS SUMMARY OF NHWCS WASTESTREAM DATA							
Item	BRS TSDR System Type Code	TSDR System Category	Description of Wastestream TSDR System	1993 Count of Largest TSDR Facilities	Count of Wastes Containing at least 1 of 4 chems	Subtotal Annual Waste Volume (Tons)	Percent of Total
1	M024	Solvents Recovery	Other solvent recovery	1	1	69	0.0%
2	M041	Incineration	Incineration - liquids	7	15	21,004	2.9%
3	M043	Incineration	Incineration - solids	3	4	3,153	0.4%
4	M051	Energy Recovery	Energy recovery - liquids	7	16	59,563	8.3%
5	M052	Energy Recovery	Energy recovery - sludges	1	4	6,026	0.8%
6	M053	Energy Recovery	Energy recovery - solids	1	3	4,519	0.6%
7	M061	Fuel Blending	Fuel blending	5	22	50,429	7.1%
8	M083	Aqueous Organic Treatment	Air/steam stripping	1	1	445,193	62.4%
9	M111	Stabilization	Stabilization/chemical fixation using cementitious materials	3	9	62,085	8.7%
10	M132	Disposal	Landfill	6	11	47,564	6.7%
11	M137	Disposal	Other Disposal N.E.C.	1	1	9,808	1.4%
12	NA	Not provided in NHWCS	Not provided in NHWCS	1	1	4,256	0.6%
Non-Duplicative Totals=				31	88	713,670	100.0%

NHWCS Database Query #2 of 2: Continued

Waste Physical Form Summary Four Headworks Solvents Summary of NHWCS Wastestream Data for Four Targeted Chemicals							
Item	BRS Waste Physical Form Code	Physical Form Category	Description of Wastestream Physical Form	1993 Count of Largest TSDR Facilities	Count of Wastes Containing at least 1 of 4 chems	Subtotal Annual Waste Volume (Tons)	Percent of all liquids
A. LIQUIDS:							
1	B101	Inorganic liquids	Aqueous waste with low solvents	2	2	449,449	75.9%
2	B116	Inorganic liquids	Leachate	1	1	9,808	1.7%
3	B201	Organic liquids	Concentrated solvent-water solution	2	3	1,323	0.2%
4	B203	Organic liquids	Nonhalogenated solvent	2	2	3,244	0.5%
5	B204	Organic liquids	Halogenated/nonhalogenated solvent mixture	14	42	112,792	19.0%
6	B205	Organic liquids	Oil-water emulsion or mixture	1	1	4,703	0.8%
7	B207	Organic liquids	Concentrated aqueous solution of other organics	1	1	911	0.2%
8	B219	Organic liquids	Other organic liquids N.E.C	2	4	10,046	1.7%
			Subtotals=		56	592,278	100.0%
B. SOLIDS/SLUDGES:							
9	B301	Inorganic solids	Soil contaminated with organics	8	12	55,521	
10	B302	Inorganic solids	Soil contaminated with inorganics only	1	1	1,575	
11	B303	Inorganic solids	Ash, slag, or other residue from incineration of wastes	2	5	40,651	
12	B312	Inorganic solids	Metal-cyanide salts/chemicals	1	1	1,070	
13	B407	Organic solids	Other halogenated organic solids	1	1	1,506	
14	B409	Organic solids	Other nonhalogenated organic solids	2	3	4,541	
15	B501	Inorganic sludges	Lime sludge without metals	1	1	1,506	
16	B505	Inorganic sludges	Untreated plating sludge without cyanides	1	1	3,040	
17	B511	Inorganic sludges	Air pollution control device (e.g. fly ash, scrubber sludge)	1	1	4,703	
18	B604	Organic sludges	Organic paint or ink sludge	1	1	1,506	
19	B606	Organic sludges	Resins, tars, or tarry sludge	1	1	218	
20	B607	Organic sludges	Biological treatment sludge	1	2	2,541	
21	B609	Organic sludges	Orther organic sludges N.E.C	1	2	3,013	
			Sludges subtotal =	7	9	16,528	
			Subtotals=		32	121,392	
			Non-Duplicative Grand totals=	31	88	713,670	

NHWCS Database Query #2 of 2: Continued

Headworks Solvents: 4 Chemicals in NHWCS Database Summary of Concentrations in RCRA Hazardous Waste All Waste Physical Forms (Liquids & Solids & Sludges)				
CAS Number>	79-46-9	79-00-5	71-43-2	110-80-5
Name of Target Chemical>	2-Nitropropane	1,1,2-Trichloroethane	Benzene	2-Ethoxyethanol
WHOLEWASTE CONC (ppm):				
Data points (if>0ppm)=	26	40	68	34
Minimum=	0.02	0.003	0.001	0.08
Maximum=	25,000	11,326	75,893	75,000
Standard deviation (sample)=	6,262	3,371	12,680	16,900
Median=	275	500	215	2,000
Simple mean=	2,502	2,470	4,677	7,627
LEACHATE CONC (ppm):				
Data points (if>0ppm)=	2	2	19	3
Minimum=	0.05	0.05	0.03	0.05
Maximum=	21,000	2,181	5,000	230
Standard deviation (sample)=	14,849	1,542	1,157	118
Median=	10,500	1,091	45	73
Simple mean=	10,500	1,091	442	101
WASTESTREAM ANNUAL VOLUME (tons):				
Data points (if>0ppm)=	27	41	75	35
Minimum=	18	18	11	18
Maximum=	16,395	16,395	445,193	16,395
Standard deviation (sample)=	4,174	4,584	51,145	3,900
Median=	1,691	3,040	2,156	1,506
Simple mean=	3,670	4,349	9,299	3,179
Total=	99,095	178,294	697,409	111,251
713,670	<Total annual volume wastestreams with at least one of four targeted chemicals.			

NHWCS Database Query #2 of 2: Continued

Headworks Solvent Chemicals Summary of Concentrations in RCRA Hazardous Waste For 4 Targeted Chemical Constituents (NHWCS): Excluding B116 Leachate				
LIQUID WASTES ONLY* (Excluding B116 Leachate)				
CAS Number>	79-46-9	79-00-5	71-43-2	110-80-5
Name of Target Chemical>	2-Nitropropane	1,1,2-Trichloroethane	Benzene	2-Ethoxyethanol
WHOLEWASTE CONC (ppm):				
Data points (if>0ppm)=	11	19	41	19
Minimum=	0.020	0.033	0.001	0.165
Maximum=	21,000	10,000	75,893	50,595
Standard deviation (sample)=	6,213	3,564	12,233	11,809
Median=	500	2,500	1,400	2,500
Simple mean=	2,277	3,286	4,247	5,210
Kurtosis**=	11.0	0.1	31.2	13.6
Skewness***=	3.3	1.2	5.4	3.6
LEACHATE CONC (ppm):				
Data points (if>0ppm)=	1	1	8	2
Minimum=	21,000	2,181	0.25	72.70
Maximum=	21,000	2,181	1,400	230
Standard deviation (sample)=	ERR	ERR	482	111
Median=	21,000	2,181	35	151
Simple mean=	21,000	2,181	222	151
Kurtosis**=	ERR	ERR	7.4	ERR
Skewness***=	ERR	ERR	2.7	ERR
WASTESTREAM ANNUAL VOLUME (tons):				
Data points (if>0ppm)=	11	19	43	19
Minimum=	18	18	11	18
Maximum=	4,703	16,380	445,193	7,241
Standard deviation (sample)=	1,571	5,009	67,543	1,812
Median=	743	782	2,156	782
Simple mean=	1,198	3,313	13,173	1,401
Total=	14,373	62,947	566,427	26,628
666,120	<Total annual volume liquids wastestreams (excluding B116 leachate).			
Explanatory Notes:				
(a)	"Liquid" only = BRS waste physical form codes B101-B119 (inorganic liquids) + B201-B219 (organic liquids).			
(b)	** Kurtosis= Measure of vertical peakedness of distribution (0=normal, >0=peaked, <0=relatively flat).			
(c)	*** Skewness= Measure of horizontal distribution symmetry (0=normal, >0=rightward stretch; <0=leftward stretch).			

NHWCS Database Query #2 of 2: Continued

Concentration Sort for Liquids Only Headworks Exemption (BRS Codes B101-B219, Excluding B116 Leachate) If Chemical mass >0												
Row	FORM CODE	WW?	WSTDESC	SYSTYPE1	TOTWQTYton	CAS	CONSTITUENT	WWCONCppm	Basis	LEACHATppm	Basis	CHIMMASSton
1	B204	N	Flammable Liquid	M051	7,241	110-80-5	2-Ethoxyethanol	50,595.230	E			366.35602
2	B204	N	Flammable & Combustible Wastes	M041	1,089	110-80-5	2-Ethoxyethanol	20,000.000	E			21.78316
3	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	42	110-80-5	2-Ethoxyethanol	2,500.000	E			0.10390
4	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	782	110-80-5	2-Ethoxyethanol	2,500.000	E			1.95397
5	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	705	110-80-5	2-Ethoxyethanol	2,500.000	E			1.76237
6	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	528	110-80-5	2-Ethoxyethanol	2,500.000	E			1.32103
7	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	865	110-80-5	2-Ethoxyethanol	2,500.000	E			2.16294
8	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitabl	M051	597	110-80-5	2-Ethoxyethanol	2,500.000	E			1.49148
9	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitabl	M051	898	110-80-5	2-Ethoxyethanol	2,500.000	E			2.24501
10	B204	N	Organic Solvents . Waste Derived Fuel Marketer , Ignitab	M051	18	110-80-5	2-Ethoxyethanol	2,500.000	E			0.04586
11	B204	N	Organic Solvents, Waste Derived Fuel Marketer, Ignitable	M061	3,050	110-80-5	2-Ethoxyethanol	2,000.000	A,93			6.09919
12	B204	N	Organic Solvents, Waste Derived Fuel Marketer, Ignitable	M061	59	110-80-5	2-Ethoxyethanol	2,000.000	A,93			0.11854
13	B204	N	Organic Solvents, Waste Derived Fuel Marketer, Ignitable	M061	542	110-80-5	2-Ethoxyethanol	2,000.000	A,93			1.08363
14	B204	N	Organic Solvents, Waste Derived Fuel Marketer, Ignitable	M061	2,201	110-80-5	2-Ethoxyethanol	2,000.000	A,93			4.40259
15	B201	N	Concentrated Solvent-water Solution	M041	577	110-80-5	2-Ethoxyethanol	230.000	E	230.000	E	0.13274
16	B201	N	Waste Solvent	M041	668	110-80-5	2-Ethoxyethanol	72.700	E	72.700	E	0.04859
17	B207	N	Pcb Contaminated Liquids	M041	911	110-80-5	2-Ethoxyethanol	50.000	E			0.01465
18	B203	N	Combustible & Flammable Wastes	M041	1,152	110-80-5	2-Ethoxyethanol	44.000	E			0.05071
19	B205	N	Oil Water Separator Bottoms; Sediments from Oil-water	M111	4,703	110-80-5	2-Ethoxyethanol	0.165	E,92			0.00039
20	B204	N	Flammable Liquid	M051	7,241	71-43-2	Benzene	75,892.860	E	55.833	E	549.53412
21	B204	N	Xylene,toluene Flam.liq.	M043	11	71-43-2	Benzene	25,000.000	E,96			0.26403
22	B219	N	Flammable Spent Reaction Solvents from Resin Production	M051	2,295	71-43-2	Benzene	8,130.100	E			18.65679
23	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	705	71-43-2	Benzene	5,500.000	E			3.87722
24	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	42	71-43-2	Benzene	5,500.000	E			0.22859
25	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	865	71-43-2	Benzene	5,500.000	E			4.75847
26	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitabl	M051	898	71-43-2	Benzene	5,500.000	E			4.93902
27	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitabl	M051	597	71-43-2	Benzene	5,500.000	E			3.28126
28	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitab	M051	528	71-43-2	Benzene	5,500.000	E			2.90626
29	B204	N	Organic Solvents . Waste Derived Fuel Marketer ,Ignitab	M051	18	71-43-2	Benzene	5,500.000	E			0.10089
30	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitab	M051	782	71-43-2	Benzene	5,500.000	E			4.29875
31	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	3,498	71-43-2	Benzene	1,800.000	A,93			6.29691
32	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	5,310	71-43-2	Benzene	1,800.000	A,93			9.55726
33	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	1,201	71-43-2	Benzene	1,800.000	A,93			2.16186
34	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	580	71-43-2	Benzene	1,800.000	A,93			1.04362
35	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	3,945	71-43-2	Benzene	1,800.000	A,93			7.10075
36	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	2,439	71-43-2	Benzene	1,800.000	A,93			4.39070
37	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	818	71-43-2	Benzene	1,800.000	A,93			1.47167
38	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	4,510	71-43-2	Benzene	1,800.000	A,93			8.11770
39	B204	N	Organic Solvents; Waste Derived Fuel Marketer; Ignitable	M061	5,435	71-43-2	Benzene	1,800.000	A,93			9.78297
40	B201	N	Lab Solvents	M041	78	71-43-2	Benzene	1,400.180	E	1,400.180	E	0.10918

Row	FORM CODE	WW?	WSTDESC	SYSTYPE1	TOTWQTYton	CAS	CONSTITUENT	WWCONCppm	Basis	LEACHATppm	Basis	CHMMASSton	
41	B204	N	Mixed Solvents	M061	2,334	71-43-2	Benzene	1,000.000	A	0.250	E	2.33351	
42	B219	N	Liquid Waste Derived Fuel Received from Off-site Blending Facility Fuels Consist of Waste Solvents, Paints, Inks, Etc.	M051	5,162	71-43-2	Benzene	500.000	E			2.58100	
43	B219	N	Liquid Waste Derived Fuel Received from Off-site Blending Facility. Fuels Consist of Waste Solvents, Paints, Inks, Etc.	M051	458	71-43-2	Benzene	500.000	E			0.11600	
44	B201	N	Concentrated Solvent-water Solution	M041	577	71-43-2	Benzene	230.000	E	230.000	E	0.13274	
45	B204	N		M061	2,156	71-43-2	Benzene	200.000	A,93			0.26729	
46	B204	N		M061	2,807	71-43-2	Benzene	200.000	A,93			0.56143	
47	B204	N		M061	2,156	71-43-2	Benzene	200.000	A,93			0.09685	
48	B204	N		M061	2,156	71-43-2	Benzene	200.000	A,93			0.17469	
49	B204	N		M061	3,201	71-43-2	Benzene	200.000	A,93			0.64020	
50	B201	N	Waste Solvent	M041	668	71-43-2	Benzene	72.700	E	72.700	E	0.04859	
51	B219	N	Liquid Waste Derived Fuel from Off-site Blending Facility. Fuels Consist of Waste Solvents, Paints, Inks, Etc	M051	2,132	71-43-2	Benzene	50.000	E			0.10660	
52	B204	N	Blended Industrial Waste Solvents from Oldover Storage	M051	16,380	71-43-2	Benzene	50.000	E			0.81901	
53	B204	N	Liquid Flammable Waste (Methanol, Toluene)	M051	16,169	71-43-2	Benzene	50.000	E			0.80846	
54	B204	N	Flammable & Combustible Wastes	M041	1,089	71-43-2	Benzene	34.000	E			0.03703	
55	B203	N	Fuel	M041	2,092	71-43-2	Benzene	16.000	A	14.000	A	0.03347	
56	B204	N	Flammable Liquid Chlorinated and Non-chlorinated Solvent	M051	5,292	71-43-2	Benzene	1.913	E93			0.01012	
57	B205	N	Oil Water Separator Bottoms; Sediments from Oil-water	M111	4,703	71-43-2	Benzene	1.850				0.00443	
58	B204	N	Mixed Solvent Waste (Organic)	M041	2,178	71-43-2	Benzene	1.000	E			0.00218	
59	B204	N	Mixed Solvent Waste (Aqueous)	M041	5,915	71-43-2	Benzene	1.000	E			0.00592	
60	B101	Y	Solvent Contaminated Groundwater Remediation Using an ai	M083	445,193	71-43-2	Benzene	0.001	A			0.00045	
61	B204	N	Mixed Solvents	M061	226	71-43-2	Benzene		A	0.250	E	0.00113	
62	B204	N	Blending & Bulking Mixed Solvents	M061	1,589	71-43-2	Benzene		A	0.250	E	0.00794	
63	B204	N	Halogenated/non-halogenated Solvent from Distilling Part	M041	377	79-00-5	1,1,2-Trichloroethane	10,000.000				3.76767	
64	B204	N	Halogenated/non-halogenated Solvent from Distilling Part	M041	651	79-00-5	1,1,2-Trichloroethane	10,000.000				6.51294	
65	B204	N	Halogenated/non-halogenated Solvent from Distilling Part	M041	2,291	79-00-5	1,1,2-Trichloroethane	10,000.000				22.91355	
66	B204	N	Flammable Liquid	M051	7,241	79-00-5	1,1,2-Trichloroethane	8,854.167	E			64.11231	
67	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	528	79-00-5	1,1,2-Trichloroethane	2,500.000	E			1.32103	
68	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	782	79-00-5	1,1,2-Trichloroethane	2,500.000	E			1.95397	
69	B204	N	Organic Solvents , Waste Derived Fuel Markete ,Ignitabl	M051	597	79-00-5	1,1,2-Trichloroethane	2,500.000	E			1.49148	
70	B204	N	Organic Solvents . Waste Derived Fuel Markete , Ignitab	M051	18	79-00-5	1,1,2-Trichloroethane	2,500.000	E			0.04586	
71	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	865	79-00-5	1,1,2-Trichloroethane	2,500.000	E			2.16294	
72	B204	N	Organic Solvents , Waste Derived Fuel Markete ,Ignitabl	M051	898	79-00-5	1,1,2-Trichloroethane	2,500.000	E			2.24501	
73	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	705	79-00-5	1,1,2-Trichloroethane	2,500.000	E			1.76237	
74	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	42	79-00-5	1,1,2-Trichloroethane	2,500.000	E			0.10390	
75	B201	N	Waste Solvent	M041	668	79-00-5	1,1,2-Trichloroethane	2,180.985	E	2,180.985	E	1.45762	
76	B204	N	Blended Industrial Waste Solvents from Oldover Storage	M051	16,380	79-00-5	1,1,2-Trichloroethane	500.000				8.19013	
77	B204	N	Liquid Flammable Waste (Methanol, Toluene)	M051	16,169	79-00-5	1,1,2-Trichloroethane	500.000	E			8.08463	
78	B204	N	Flammable Liquids	M041	483	79-00-5	1,1,2-Trichloroethane	390.000	E			0.18847	
79	B205	N	Oil Water Separator Bottoms; Sediments from Oil-water	M111	4,703	79-00-5	1,1,2-Trichloroethane	3.800	E,92			0.00909	
80	B204	N	Flammable Liquid Chlorinated and Non-chlorinated Solvent	M051	5,292	79-00-5	1,1,2-Trichloroethane	0.496	E93			0.00263	
81	B101	Y	Legacy Waste Treatment Sludges		NA	4,256	79-00-5	1,1,2-Trichloroethane	0.033				0.00014
82	B204	N	Paint & Solvent	M024	69	79-46-9	2-Nitropropane	21,000.000	E,93	21,000.000	E,93	1.44843	
83	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	528	79-46-9	2-Nitropropane	500.000	E			0.26421	
84	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	705	79-46-9	2-Nitropropane	500.000	E			0.35247	
85	B204	N	Organic Solvents , Waste Derived Fuel Markete , Ignitab	M051	865	79-46-9	2-Nitropropane	500.000	E			0.43259	
86	B204	N	Organic Solvents . Waste Derived Fuel Markete , Ignitab	M051	18	79-46-9	2-Nitropropane	500.000	E			0.00917	

Row	FORM CODE	WW?	WSTDESC	SYSTYPE1	TOTWQTYton	CAS	CONSTITUENT	WWCONCppm	Basis	LEACHATppm	Basis	CHMMASSton
87	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	782	79-46-9	2-Nitropropane	500.000	E			0.39079
88	B204	N	Organic Solvents , Waste Derived Fuel Marketer , Ignitab	M051	42	79-46-9	2-Nitropropane	500.000	E			0.02078
89	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitabl	M051	898	79-46-9	2-Nitropropane	500.000	E			0.44900
90	B204	N	Organic Solvents , Waste Derived Fuel Marketer ,Ignitabl	M051	597	79-46-9	2-Nitropropane	500.000	E			0.29830
91	B207	N	Pcb Contaminated Liquids	M041	911	79-46-9	2-Nitropropane	50.000	E			0.01465
92	B205	N	Oil Water Separator Bottoms; Sediments from Oil-water	M111	4.703	79-46-9	2-Nitropropane	0.020	E,92			0.00005

**6. USEPA Office of Solid Waste
Industrial Surface Impoundment Survey**

Database Query Findings

**Year 2000 Office of Solid Waste “Industrial Surface Impoundment Study” of Non-Hazardous Wastes:
Summary of Surface Impoundment Operating Status & Operating Quantities in Survey Sample**

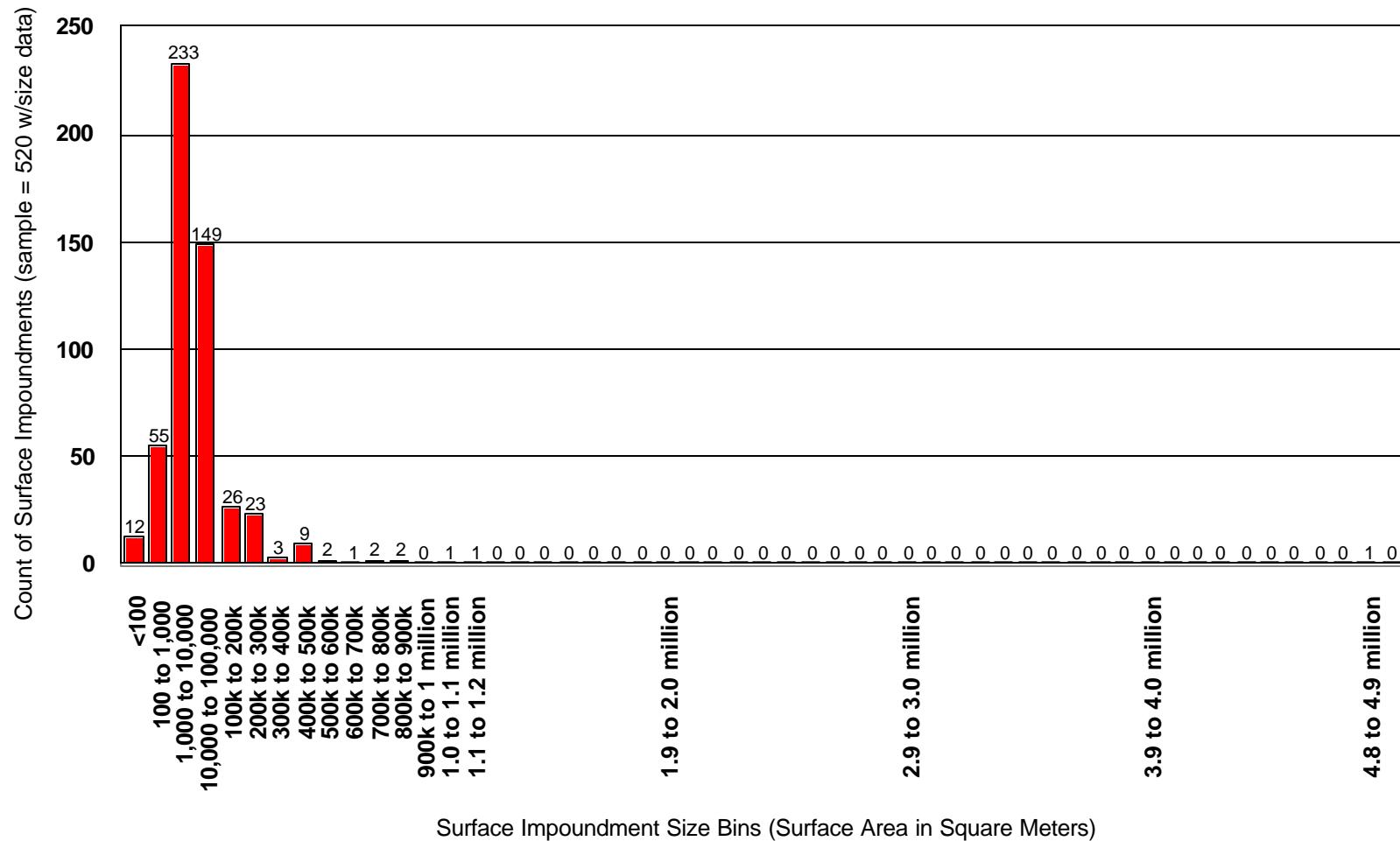
Survey Metric	Count in total sample	Count of operating surface impoundments	Surface impoundments which have stopped receiving wastes	Don't know status (no data)
1. Count of surface impoundments in survey sample	523	454	61	8
2. Count of facilities with surface impoundments in sample	155	134	39	4
3. Count of states with surface impoundments in sample	44	42	23	4
4. Size (area) of surface impoundments in sample (square meters):				
datapoints (nr. of surf. impoundments w/data)	520	453	59	8
min	9.29	9.85	9.29	
max	4.9 million	4.9 million	259,000	
average	62,000	67,800	11,500	
median	6,500			
5. Typical wastewater operating quantities (metric tons/year):				
datapoints (nr. of surf. impoundments w/data)	437	398	37	2
min	0.38	0.38	17.03	
max	14.5 million	14.5 million	1.5 million	
average	308,000	331,000	71,000	
sum	134.5 million	131.9 million	2.6 million	
6. Typical sludge operating quantities (metric tons/year):				
datapoints (nr. of surf. impoundments w/data)	164	148	16	0
min	1.41	1.41	3.62	
max	2.1 million	2.1 million	1.4 million	
average	86,000	85,000	95,000	
sum	14.1 million	12.6 million	1.5 million	

Explanatory Notes:

(a) Source: USEPA OSWER “Industrial Surface Impoundments in the United States”, EPA-530-R-01-005, March 2001, <http://www.epa.gov/OSWRCRA/hazwaste/lcr/impdfs/sisrept.pdf>.

(b) The survey sample consisted of data received from 155 facilities with 523 industrial surface impoundments; in comparison, the study estimates a US total universe of 16,782 industrial surface impoundments located at 7,459 facilities.

Industrial Surface Impoundment Size Distribution
(Based on Year 2000 EPA Survey Sample of 523 surface impoundments at 155 facilities)



**Count of Industrial Surface Impoundments in Operation Sometime Between 1990-1999
Which Received Influent RCRA Non-Hazardous Wastewaters
Containing One or More of the Four Target Chemicals***

A. Surface Impoundment Wastewaters (only managing RCRA non-hazardous wastewaters):

Chemical in Wastewaters*	Count of economic sectors reporting chemical present in surface impoundment sludges**	Count of surface impoundments with chemical present in wastewater***	Total quantity of chemical in wastewater within all impoundments (kg)	Quantity of chemical in wastewater influent (kg/year)	Quantity of chemical in wastewater effluent (kg/year)
Benzene	4	1,108 (sd= 665)	51 (sd=71)	4,164 (sd= 3,496)	2,262 (sd= 2,205)
1,1,2-Trichloroethane	1	14 (sd=18)	0	0	0
2-Ethoxyethanol	0	0	0	0	0
2-Nitropropane	0	0	0	0	0

B. Surface Impoundment Wastewater Sludges (only generating RCRA non-hazardous sludges):

Chemical in Wastewater Sludges*		Count of surface impoundments with chemical present in sludge***	Total quantity of chemical in sludge within all impoundments (kg)	Quantity of chemical in sludge influent (kg/year)	Quantity of chemical in sludge effluent (kg/year)
Benzene		581	0	0	0
1,1,2-Trichloroethane		0	0	0	0
2-Ethoxyethanol		0	0	0	0
2-Nitropropane		0	0	0	0

Explanatory Notes:

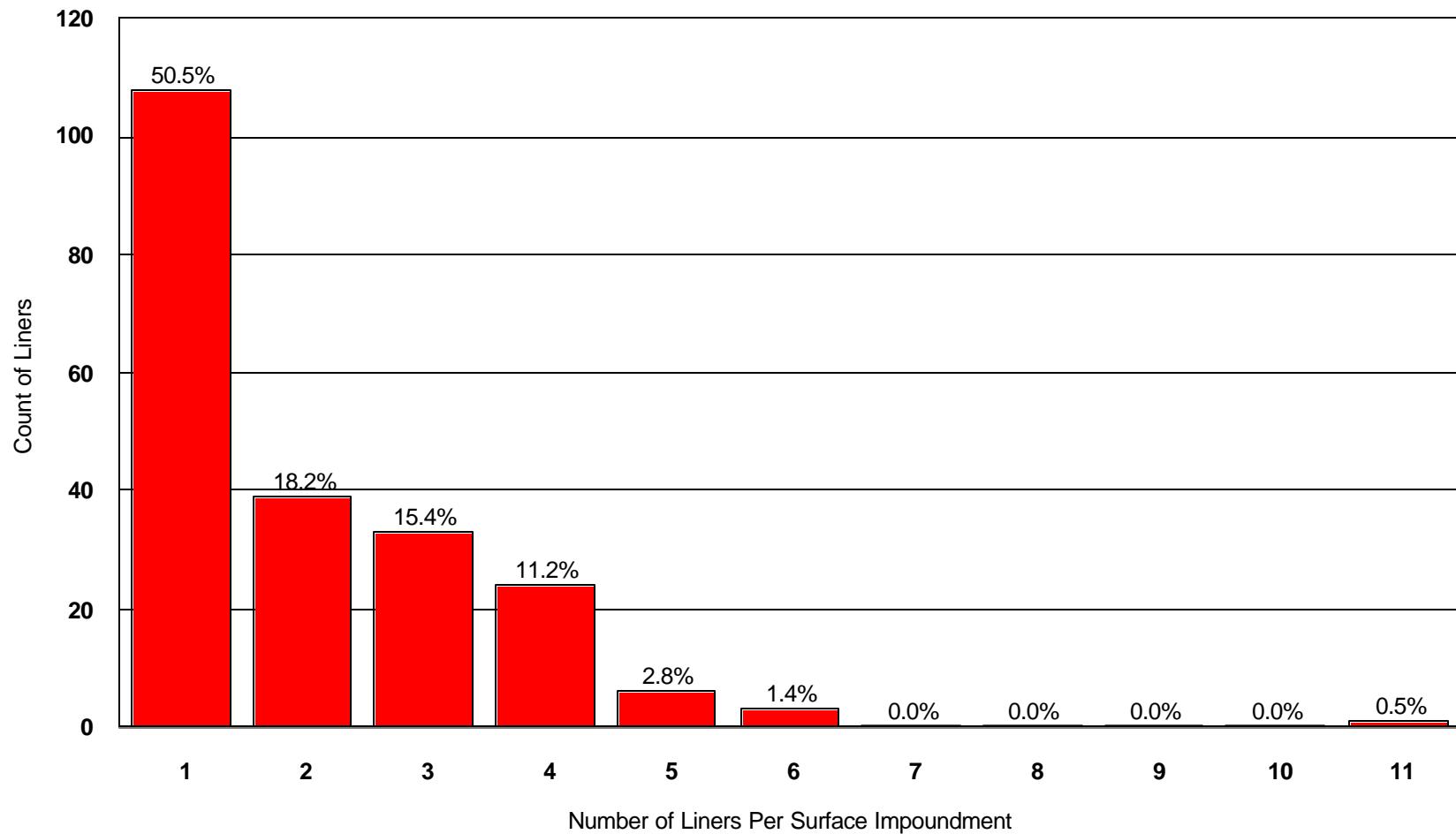
- (a) Source: USEPA "Industrial Surface Impoundments in the United States", EPA-530-R-01-005, March 2001, <http://www.epa.gov/OSWRCRA/hazwaste/lcr/impdfs/sisrept.pdf>.
- (b) * The data in this table for these four chemicals may or may not represent the chemical as an industrial spent solvent.
- (c) ** 15 economic sectors defined in the survey, based on 2-digit SIC codes.
- (d) *** The survey estimated a US national total of 16,782 non-hazardous wastewater management surface impoundments located at 7,459 facilities. These estimates are extrapolated from an initial "screening survey" sample size of 2,285 facilities, followed by a "long survey" sample size of 221 facilities.
- (e) sd = standard deviation of sampling distribution for survey-based estimate.
- (f) kg = kilogram = 2.2 pounds.

**Summary of Industrial Surface Impoundment Liner Types
According to Eight Liner Materials Categories**

**Source: based on a sample of 214 surface impoundments with liner type data for 440 liners
reported in OSW's year 2000 Industrial Surface Impoundment Survey (ISIS)
which collected information from a survey sample response of 660 impoundments at 221 facilities**

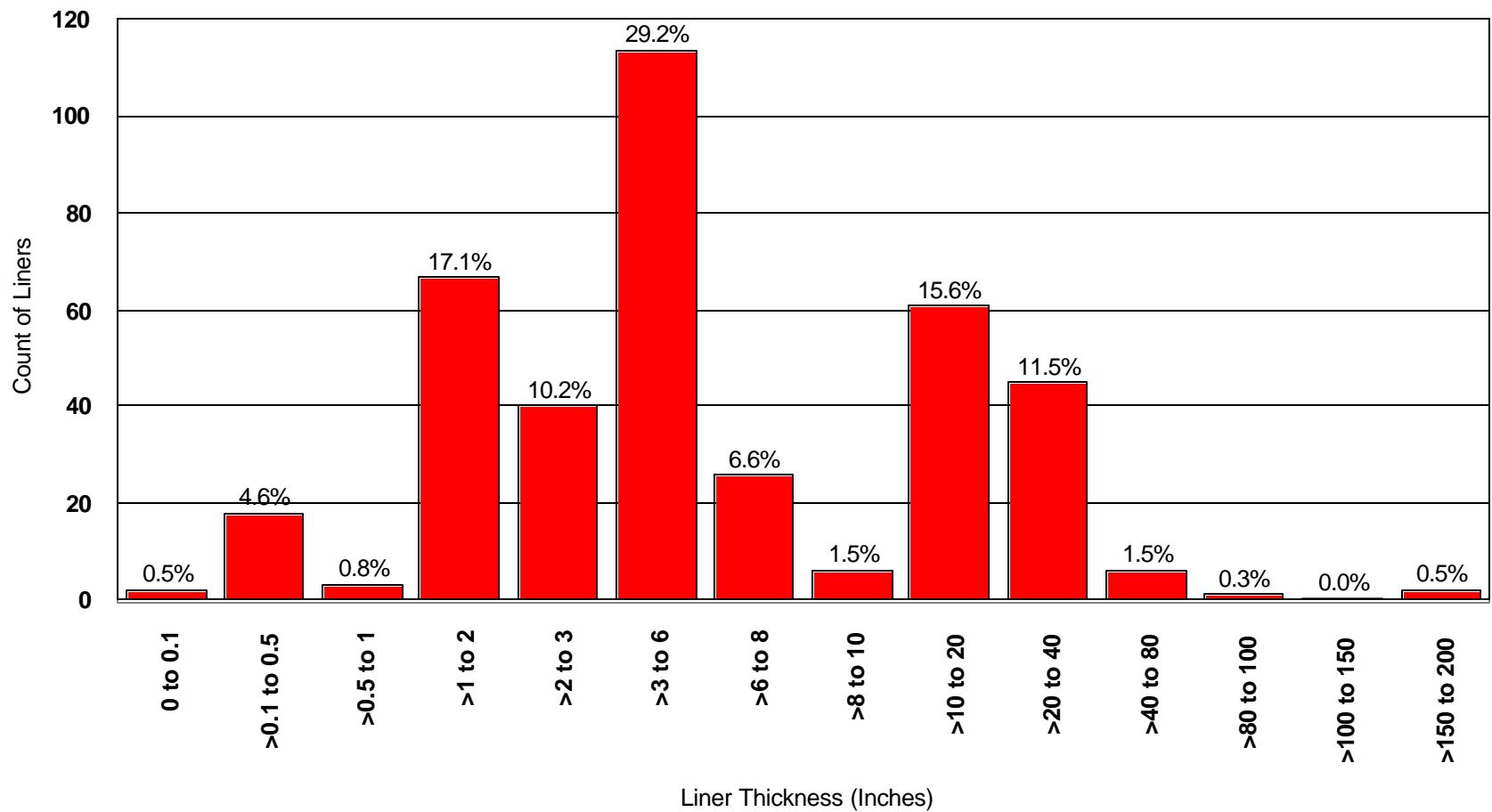
Category Item	Surface Impoundment Liner Material Category	ISIS Data Sample (nr. of liners)	Minimum liner thickness (inches)	Maximum liner thickness (inches)
1	Brick	1	2.5	2.5
2	Cementitious	62	0.125	12
3	Clay	117	2	197
4	Plastic (synthetic, etc.)	124	0.003	3.9
5	Sand	38	2	36
6	Soil	30	6	36
7	Stone	40	4	18
8	Textile (synthetic, etc.)	28	0.23	39
Column total =		440		

Number of Liners Per Non-Hazardous Waste Surface Impoundment



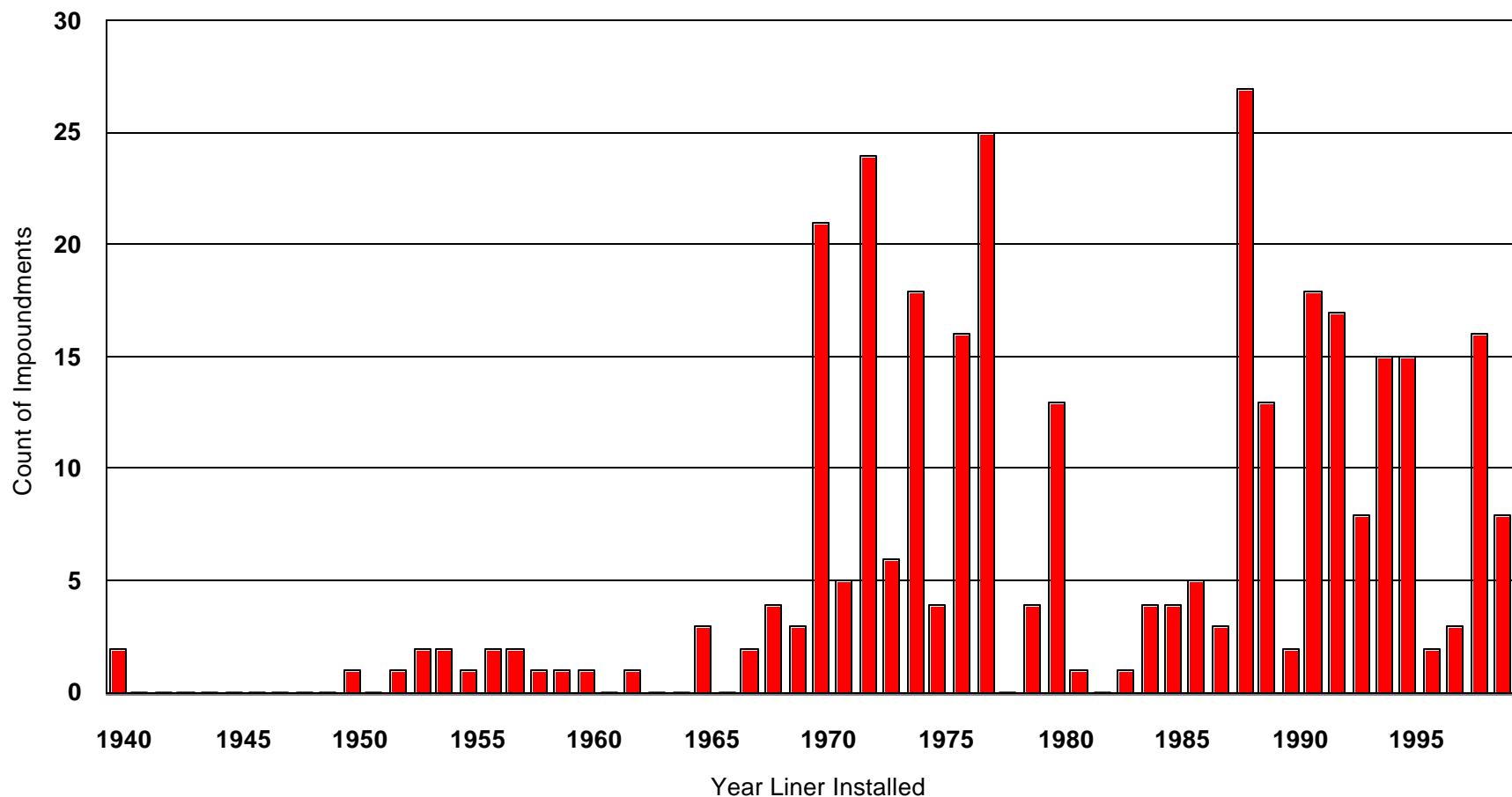
Source: OSW Industrial Surface Impoundment Survey, EPA-530-R-01-005, March 2001 (based on a sample of 214 impoundments reporting liner data).

Surface Impoundment Liner Thickness



Source: OSW Industrial Surface Impoundment Survey, EPA-530-R-01-005, March 2001 (based on a sample of 391 liners reporting thickness data convertible to inches).

Frequency of Liner Installation in Industrial Surface Impoundments 60-Year Period 1940 to 1999



Source: OSW Industrial Surface Impoundment Survey, EPA-530-R-01-005, March 2001 (based on a sample of 327 liners with year data).

Industrial Surface Impoundment Overtopping Events:
(based on year 2000 survey sample of 155 facilities with 523 surface impoundments)

Data item	Facility ID nr.	Impdt ID nr.	Type of overtopping event	Year of overtop	Cause of overtopping event	Gallons of waste released	Operating status* 1999	SI surface area (m^2)	City	State
1	1320	1	Overtopping - flow w/solids through spillway	1995	Upset at wastewater treatment		1	258,999	Copperhill	TN
2	1367	3	Overtopped into A001	1997	Pump to City failed	0	2	2,694	UNIONTOWN	AL
3	1367	3	overtopped into A001	1998	pump to city failed	0	2	2,694	UNIONTOWN	AL
4	1491	1	overtopping	1998	heavy rainfall	0	1	2,415	Houston	TX
5	1491	2	overtopping	1998	heavy rainfall	0	1	3,066	Houston	TX
6	1754	1	Overtopping	1997	Heavy Rain	500,000	3	2,323	ELWOOD	IL
7	1754	1	Overtopping	1996	500 Yr Storm, Power Failure	8,400,000	3	2,323	ELWOOD	IL
8	1754	1	Overtopping	1993	100 Yr Storm, Elec. Failure	1,800,000	3	2,323	ELWOOD	IL
9	1754	2	Overtopping	1996	500 YR Storm Event	27,000	2	7,897	ELWOOD	IL
10	2058	2	overtopping	1995	effluent pipe plugged	500	2	12,141	WICKLIFE	KY
11	3104	1	overtopping	1996	heavy rainfall	75,000	2	1,533	WEST MEMPHIS	AR
12	3104	2	Overtopping	1996	excess process flow	7,950,000	2	18,581	WEST MEMPHIS	AR
13	3104	2	Overtopping	1996	heavy rainfall	225,000	2	18,581	WEST MEMPHIS	AR
14	3150	13	overtopping	1995	potentially restricted drain line		2	19,425	COLUMBUS	MS
15	3150	13	overtopping	1997	severe thunderstorm resulting in excess stormwater and restricted drain line		2	19,425	COLUMBUS	MS
16	3177	1	Over filled the marsh and impoundment area	1998	12 inches of rain in 10 hours		2	80,937	MAGNOLIA	AR
17	3413	1	Overtopping Foam Pond	1995	Blocked discharge line		2	285,708	MOBILE	AL
18	4071	3	Houston Ship Channel rose above the top of the Dik	1983	Hurricane Alicia		2	708,201	BAYTOWN	TX
19	4071	4	Houston ship channel rose above the top of the dik	1983	Hurricane Alicia		2	283,280	BAYTOWN	TX
20	4071	5	Houston ship channel rose above top of dike wall	1983	Hurricane Alicia		2	424,920	BAYTOWN	TX
21	4071	6	Houston ship channel rose above the top of the dik	1983	Hurricane Alicia		2	36,422	BAYTOWN	TX
22	4104	2	overtopping of surface impoundment #2	1995	high hydraulic load and 4" rainfall	2,500	2	11,331	ENKA	NC
23	4718	4	Overtopping	1999	Hurricane Floyd		2	2,023	VANCEBORO	NC
24	5087	1	overtopping	2000	heavy rain and high influent flow	3,000	2	16,187	Riverville	VA
25	5174	1	Overtopping	Unknown	Extreme high tides or extreme storm runoff		1	31	FREELAND	WA
26	6024	1	Overtopping	1997	High Winds	75	2	16,187	HENDERSON	NV

Data item	Facility ID nr.	Impdt ID nr.	Type of overtopping event	Year of overtop	Cause of overtopping event	Gallons of waste released	Operating status* 1999	SI surface area (m^2)	City	State
27	6177	1	Overflow through emergency spillway to Foam Pond S	1990	Secondary lift pumps tripped out.	20,000	2	2,843	BAILEYVILLE	ME
28	6177	1	Overflow through emergency spillway to Foam Pond S	1992	River water treatment plant overflowed - no water being drawn.	42,000	2	2,843	BAILEYVILLE	ME
29	6177	8	Discharge through overflow pipe.	1991	Pump station plugged	15,750	2	2,023	BAILEYVILLE	ME
30	6177	9	Discharge line clean-out was damaged. Geyser into	1991	In process of grading force main discharge at pond was hit and broken.	4,000	2	11,736	BAILEYVILLE	ME
31	6177	9	Overflow through existing emergency wier.	1992	Float switchs and emergency overflow wier levels set wrong after engineering redesign.	1,357	2	11,736	BAILEYVILLE	ME
32	6177	9	Underdrain Pump Station overflow through pipe to a	1991	Temporary pumping system failed.	58,233	2	11,736	BAILEYVILLE	ME
33	6623	2	Overtopping	1985	Overfilled	100	2	3,586	NORTH POLE	AK
34	6790	1	Overtopping	1998	Heavy rain	18,720	2	1,672	FREEPORT	TX
35	6790	1	Overtopping	1998	Heavy rain, process upset	155,400	2	1,672	FREEPORT	TX
36	6790	1	Overtopping	1998	Heavy rain, treatment not taking flow	11,400	2	1,672	FREEPORT	TX
37	6790	1	Overtopping	1998	Process upsets	600	2	1,672	FREEPORT	TX
38	6790	1	Overtopping	1998	Process upsets	60	2	1,672	FREEPORT	TX
39	6790	1	Overtopping	1998	Heavy rain, loss of utilities	1,164,466	2	1,672	FREEPORT	TX
40	6790	1	Overtopping	1998	Heavy rain	77,790	2	1,672	FREEPORT	TX
41	6790	1	Overtopping	1999	Utilities upset	4,920	2	1,672	FREEPORT	TX
42	6790	1	Overtopping	1998	Tropical storm Francis	167,640	2	1,672	FREEPORT	TX
43	6790	8	overtopping (typical of heavy rains)	1998	heavy rain	20,000	2	1,229	FREEPORT	TX
44	6790	9	Overtopping	1998	River water pipe next to pond had leak.		2	534	FREEPORT	TX
45	6790	9	Overtopping	1997	Heavy rainfall and pumps had been cutoff.	50,000	2	534	FREEPORT	TX
46	6790	9	Overtopping	1998	Tropical Storm Francis		2	534	FREEPORT	TX
47	6816	1	Overtopping	1995	Plug between pond 1 & pond 2	4,800	2	37,161	Marietta	OH
48	6816	1	Overtopping	1998	Plug between pond 2 & pond 3	7,200	2	37,161	Marietta	OH
49	6816	1	Overtopping	1995	Plug between pond 1 & pond 2	1,260	2	37,161	Marietta	OH
50	6881	1	Overtopping	1997	5.75 inch rainfall event in a 12 hour period; cause of overflow was related to wave action	100,000	2	21,448	Deer Park	TX
51	7278	1	Hurricane Danny	1998	Excessive Rain		2	390	THEODORE	AL
52	8418	4	Overtopping	1990	Excessive rain and plugged effluent pipe.	400	1	3,716	RUSSELL	MA
53	8689	7	Overtopping	1998	Heavy rainfall* (see note)		2	669	COURTLAND	AL

Data item	Facility ID nr.	Impdt ID nr.	Type of overtopping event	Year of overtop	Cause of overtopping event	Gallons of waste released	Operating status* 1999	SI surface area (m^2)	City	State
54	8689	7	Overtopping	1997	Heavy rainfall* (see note)		2	669	COURTLAND	AL
55	8689	7	Overtopping	1996	Heavy rainfall* (see note)		2	669	COURTLAND	AL
56	8689	7	Overtopping	1996	Heavy rainfall* (see note)		2	669	COURTLAND	AL
57	8689	7	Overtopping	1996	Heavy rainfall* (see note)		2	669	COURTLAND	AL
58	8689	7	Overtopping	1996	Heavy rainfall* (see note)		2	669	COURTLAND	AL
59	8689	7	Overtopping	1998	Heavy rainfall* (see note)		2	669	COURTLAND	AL
60	8689	7	Overtopping	1997	Heavy rainfall* (see note)		2	669	COURTLAND	AL
61	8689	7	Overtopping	1997	Heavy rainfall* (see note)		2	669	COURTLAND	AL
62	8689	7	Overtopping	1997	Heavy rainfall* (see note)		2	669	COURTLAND	AL
63	8689	7	Overtopping	1996	Heavy rainfall* (see note)		2	669	COURTLAND	AL
64	8984	3	Dike failure	1993	Underdrain failure	0	2	6,877	SEAFORD	DE
65	9251	1	Overtopping - Flooded Property	1998	Hurricane Georges		2	836	MOSS POINT	MS
66	9260	16	Overtopping	1993	Extremely heavy rainfall	1,600,000	2	40,630	MANDAN	ND
26	34	< non-duplicative column totals			Column total =	22,509,171			Non-duplicative count =	17

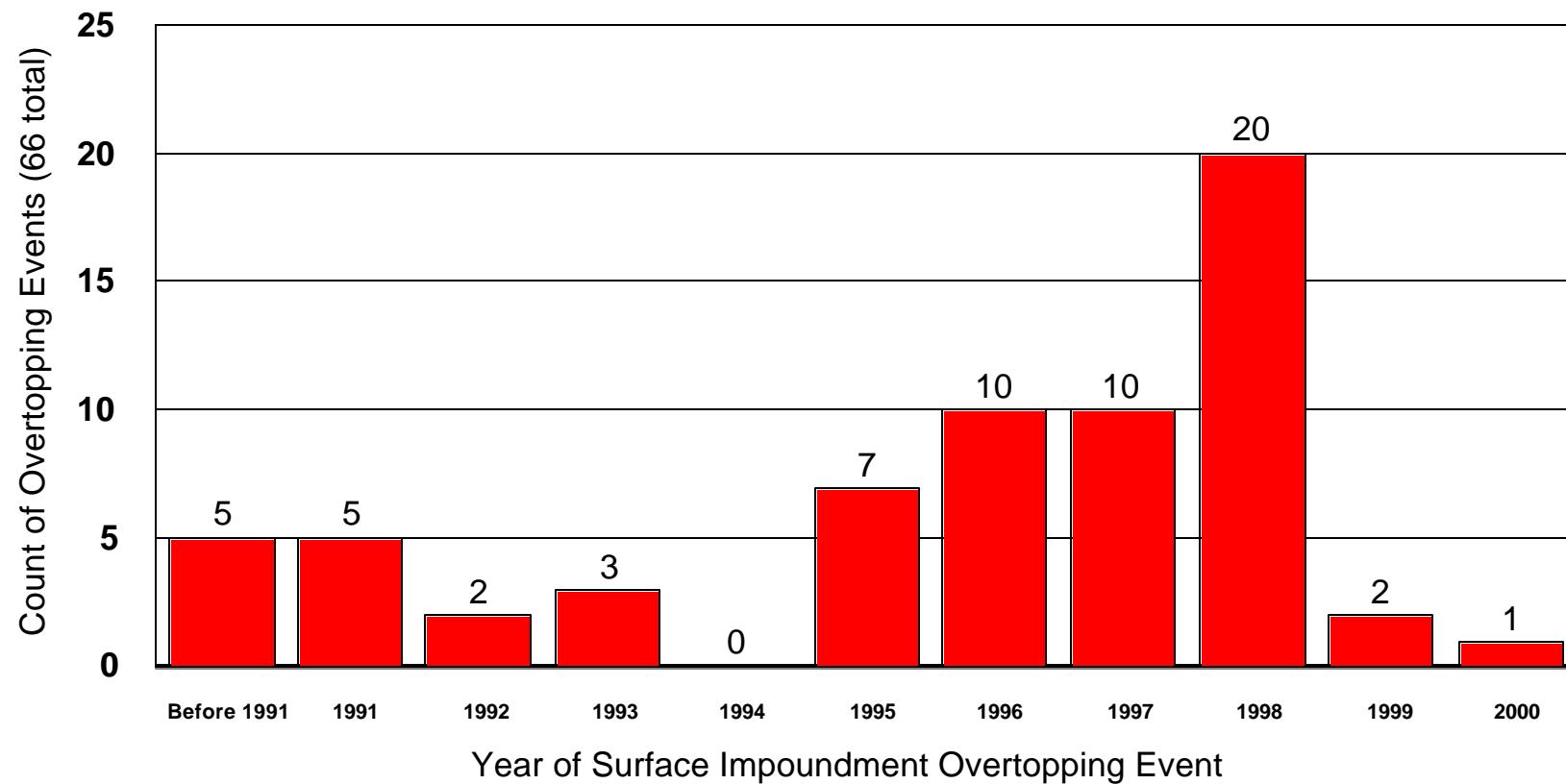
Explanatory Notes:

(a) * Status: 1= stopped receiving waste; 2= still receiving waste; 3, 4 or 5= don't know

(b) Source: US EPA Office of Solid Waste, "Industrial Surface Impoundments in the United States", EPA-530-R-01-005, March 2001, (<http://www.epa.gov/OSWRCRA/hazwaste/lcr/lcr/impdfs/sisreprt.pdf>).

0	Min	31	
8,400,000	Max	708,201	
562,729	Mean	37,830	
13,575	Median	2,369	

Summary of 1990s Industrial Surface Impoundment Overtopping Events
Based on OSW survey sample of 523 surface impoundments at 155 facilities



Average annual overtopping events 1991-1999 = 7 (7 of 523 survey sample impoundments = 1.34%)
A subtotal of 27 different impoundments failed 1991-1999 ($27/523 = 5.2\%$)

Surface Impoundment Liner Failure Events
(based on year 2000 survey sample of 155 facilities with 523 surface impoundments)

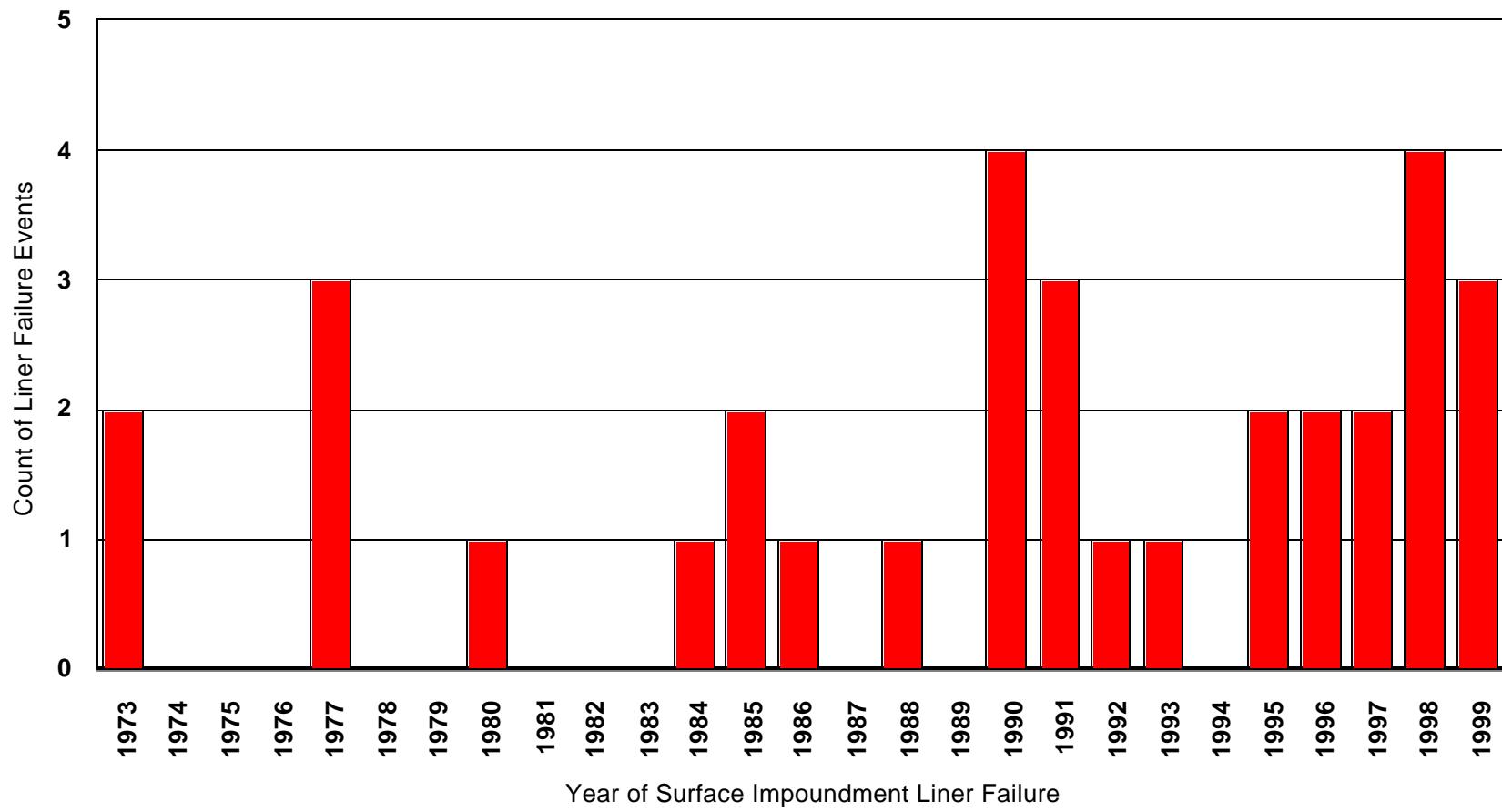
	Facility survey	Surface impdt	Liner failure	Year failure	Year failure resolved	Description or additional information about liner failure	Liner ID nr.	Type of Surface Impoundment Liner	Liner thickness L_THICK	Thickness measure units L_Unit	Liner hydraulic conductivity LHC	LHC measure units	Year liner installed	Implied years to failure after installation	Surface impndmt location			
															City	State		
1	2748	3	1	90	93	Repair work (patching) began upon discovery of tears.; A new liner was installed.	1	HDPE	60	mils				93		9,680	NEW ELLENTON	SC
2	2748	3	1	90	93	Repair work (patching) began upon discovery of tears.; A new liner was installed.	2	EPDM	62.5	mils				70	20	9,680	NEW ELLENTON	SC
3	2748	4	1	90	98	Repair work (patching) began upon discovery of tears in 1990. A new liner was installed in 1998.	1	HDPE	60	mils				98		6,987	NEW ELLENTON	SC
4	2748	4	1	90	98	Repair work (patching) began upon discovery of tears in 1990. A new liner was installed in 1998.	2	EPDM	62.5	mils				70	20	6,987	NEW ELLENTON	SC
5	3328	3	1	95	95	Date Failure Began: 07/29/95 est.; Date Discovered: 07/29/95 est.; Date Resolved: 8/20/95 est.	1	RipRap	6	in	8.40E-003	cm/sec	76	19	5,574	BRANDENBURG	KY	
6	3328	3	1	95	95	Date Failure Began: 07/29/95 est.; Date Discovered: 07/29/95 est.; Date Resolved: 8/20/95 est.	2	Compacted Earth	6	in	1.00E-005	cm/sec			5,574	BRANDENBURG	KY	
7	3328	3	1	95	95	Date Failure Began: 07/29/95 est.; Date Discovered: 07/29/95 est.; Date Resolved: 8/20/95 est.	3	PVC Liner	30	mils	1.00E-010	cm/sec			5,574	BRANDENBURG	KY	
8	3328	3	1	95	95	Date Failure Began: 07/29/95 est.; Date Discovered: 07/29/95 est.; Date Resolved: 8/20/95 est.	4	Compacted Earth	2	ft	1.00E-005	cm/sec			5,574	BRANDENBURG	KY	
9	3639	1	1	93	93	Date Discovered: Planned modification to inlet pipe (entered 1993 as year discovered)	1	HDPE Liner	60	mils	1.00E-013	cm/sec	91	2	2,023	MARSHALLTOWN	IA	
10	3639	1	1	93	93	Date Discovered: Planned modification to inlet pipe (entered 1993 as year discovered)	2	Recompacted Clay Till	4	ft	0.00E+000	cm/sec			2,023	MARSHALLTOWN	IA	
11	3639	1	1	93	93	Date Discovered: Planned modification to inlet pipe (entered 1993 as year discovered)	3	Recompacted Clay Till	0.67	ft	0.00E+000	cm/sec			2,023	MARSHALLTOWN	IA	
12	3639	1	2	99		Date Discovered: Small tear in HDPE liner in Free Board above maximum Leachate level; Date Resolved: Pending (entered 1999 as year discovered)	1	HDPE Liner	60	mils	1.00E-013	cm/sec	91	8	2,023	MARSHALLTOWN	IA	
13	3639	1	2	99		Date Discovered: Small tear in HDPE liner in Free Board above maximum Leachate level; Date Resolved: Pending (entered 1999 as year discovered)	2	Recompacted Clay Till	4	ft	0.00E+000	cm/sec			2,023	MARSHALLTOWN	IA	
14	3639	1	2	99		Date Discovered: Small tear in HDPE liner in Free Board above maximum Leachate level; Date Resolved: Pending (entered 1999 as year discovered)	3	Recompacted Clay Till	0.67	ft	0.00E+000	cm/sec			2,023	MARSHALLTOWN	IA	
15	4732	1	1	80	80	Failure Began, Discovered, and Resolved: Approx. 1980	1	High density polyethylene	45	mils	0.00E+000	cm/sec	95		1,547	WILLIAMSPORT	PA	
16	4732	1	1	80	80	Failure Began, Discovered, and Resolved: Approx. 1980	2	Fill Dirt	6	in			73	7	1,547	WILLIAMSPORT	PA	
17	4732	1	1	80	80	Failure Began, Discovered, and Resolved: Approx. 1980	3	PVC	40	mils	0.00E+000	cm/sec	73	7	1,547	WILLIAMSPORT	PA	
18	4732	1	1	80	80	Failure Began, Discovered, and Resolved: Approx. 1980	4	Clay, compacted	5	ft			73	7	1,547	WILLIAMSPORT	PA	
19	6177	4	1	77	81	Date Failure Began: ~1977; Discovered: ~1977; Resolved: ~1977-1981 (entered 1981 as date resolved)	1	Compacted Clay	2	ft	0.00E+000	cm/sec	77		168,319	BAILEYVILLE	ME	
20	6177	4	1	77	81	Date Failure Began: ~1977; Discovered: ~1977; Resolved: ~1977-1981 (entered 1981 as date resolved)	2	Bentonite Blanket	2	in	0.00E+000	cm/sec	77		168,319	BAILEYVILLE	ME	
21	6177	4	1	77	81	Date Failure Began: ~1977; Discovered: ~1977; Resolved: ~1977-1981 (entered 1981 as date resolved)	3	Compacted Till (Over exposed bedrock)	3	ft	5.00E-007	cm/sec	77		168,319	BAILEYVILLE	ME	
22	6177	5	1	77	81	Date Failure Began: ~1977; Discovered: ~1977; Resolved: ~1977-1981 (entered 1981 as date resolved)	1	Compacted Clay	2	ft	0.00E+000	cm/sec	77		133,458	BAILEYVILLE	ME	
23	6177	5	1	77	81	Date Failure Began: ~1977; Discovered: ~1977; Resolved: ~1977-1981 (entered 1981 as date resolved)	2	Compacted Till (Over exposed bedrock)	3	ft	5.00E-007	cm/sec	77		133,458	BAILEYVILLE	ME	
24	6409	2	1	77	78	Date Failure Began: Between 10/77 & 04/78 (entered 10/77); Date Discovered: 04/25/78; Date resolved: 05/05/78	1	Hypalon synthetic rubber	30	mils			77		86,270	MILLINOCKET	ME	
25	6409	2	1	77	78	Date Failure Began: Between 10/77 & 04/78 (entered 10/77); Date Discovered: 04/25/78; Date resolved: 05/05/78	2	Sand	30	in					86,270	MILLINOCKET	ME	
26	6409	2	1	77	78	Date Failure Began: Between 10/77 & 04/78 (entered 10/77); Date Discovered: 04/25/78; Date resolved:	3	PVC pipe	8	in					86,270	MILLINOCKET	ME	

Data item	Facility survey ID nr. FAC_ID	Surface impndt ID nr. IMP_ID	Liner failure ID nr. LF_ID	Year failure began FB_YR	Year failure resolved DR_YR	Description or additional information about liner failure	Liner ID nr.	Type of Surface Impoundment Liner	Liner thickness L_THICK	Thickness measure units L_Unit	Liner hydraulic conductivity LHC	LHC measure units	Year liner installed	Implied years to failure after installation	Surf.impndt surface area (m^2)	Surface impndmt location	
																City	State
						05/05/78											
27	6519	1	1	98	99	Date Failure Began: E, 1998; Date Resolved: November 6, 1999; Note: The liner failure event referenced above involved minor tears above the water line due to sharps. Repairs were made using extrusion welded patches of 60 mil textured HDPE liner over the	1	Textured 60 mil HDPE liner	60	mils			97	1	5,342	MASSENA	NY
28	6519	2	1	98	99	Date Failure Began: E, 1998; Date Discovered: E, October 1998; Date Resolved: November 6, 1999; Note: The liner failure event referenced above involved minor tears and cuts above the water line due to sharps. Repairs were made using extrusion welded patches of 60 mil textured HDPE liner over the	1	60 mil HDPE liner	60	mils			97	1	52,609	MASSENA	NY
29	6519	3	1	99	99	Date Resolved: November 6, 1999; Note: The liner failure event referenced above involved liner punctures above the water line. Repairs were made using extrusion welded patches of 60 mil textured HDPE liner over the holes or tears. Memorandum dated	1	60 mil HDPE liner	60	mils			98	1	1,012	MASSENA	NY
30	6623	1	1	88	88	Primary liner	1	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			1,759	NORTH POLE	AK
31	6623	1	1	88	88	Primary liner	2	Poltnet PN 1000 Drain Fabric	1,000.00	mils	3.39E+000	cm/sec			1,759	NORTH POLE	AK
32	6623	1	1	88	88	Primary liner	3	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			1,759	NORTH POLE	AK
33	6623	1	1	88	88	Primary liner	4	Mirafi 140N Geotextile	140	mils	8.15E+000	cm/sec			1,759	NORTH POLE	AK
34	6623	1	2	97	97	Primary liner	1	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			1,759	NORTH POLE	AK
35	6623	1	2	97	97	Primary liner	2	Poltnet PN 1000 Drain Fabric	1,000.00	mils	3.39E+000	cm/sec			1,759	NORTH POLE	AK
36	6623	1	2	97	97	Primary liner	3	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			1,759	NORTH POLE	AK
37	6623	1	2	97	97	Primary liner	4	Mirafi 140N Geotextile	140	mils	8.15E+000	cm/sec			1,759	NORTH POLE	AK
38	6623	2	1	95	96		1	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			3,586	NORTH POLE	AK
39	6623	2	1	95	96		2	Poltnet PN 1000 Drain Fabric	1,000.00	mils	3.39E+000	cm/sec			3,586	NORTH POLE	AK
40	6623	2	1	95	96		3	Seamans 8228 ORLTA Arctic Liner	36	mils	1.00E-005	cm/sec			3,586	NORTH POLE	AK
41	6623	2	1	95	96		4	Mirafi 140N Geotextile	140	mils	8.15E+000	cm/sec			3,586	NORTH POLE	AK
42	6790	1	1	85		Date Resolved: Not resolved	1	concrete	3	in			80	5	1,672	FREEPORT	TX
43	6790	2	1	85		Date Resolved: Not resolved	1	concrete	4	in			80	5	2,415	FREEPORT	TX
44	6790	6	1	73		Date Failure Began: ?? - 1973; Date Discovered: ?? - 1975; date Resolved: Have not resolved	1	concrete	4	in			70	3	1,244	FREEPORT	TX
45	6790	7	1	73		Date Failure Began: ?? - 1973; Date Discovered: ?? - 1975; date Resolved: Have not resolved	1	concrete	4	in			70	3	743	FREEPORT	TX
46	7113	1	1	98	99	Date Resolved: November 20, 1998, July 7, 1999 (See Attachment for Explanation), entered July 1999 as date resolved	1	HDPE	80	mils	0.00E+000	cm/sec	99		1,421	GASTONIA	NC
47	7113	1	1	98	99	Date Resolved: November 20, 1998, July 7, 1999 (See Attachment for Explanation), entered July 1999 as date resolved	2	Hypalon	36	mils	1.51E-011	cm/sec	88	10	1,421	GASTONIA	NC
48	7113	1	2	99	99	Date Discovered: September 25, 1999; Date Resolved: November 26, 1999, December 27, 1999 (See Attachment for Explanation), entered December 1999 as date resolved	1	HDPE	80	mils	0.00E+000	cm/sec	99		1,421	GASTONIA	NC
49	7113	1	2	99	99	Date Discovered: September 25, 1999; Date Resolved: November 26, 1999, December 27, 1999 (See Attachment for Explanation), entered December 1999 as date resolved	2	Hypalon	36	mils	1.51E-011	cm/sec	88	11	1,421	GASTONIA	NC
50	7642	1	1	91	91	The modification to the concrete liner for the provision of weep holes to equalize hydrostatic pressure was initiated in 1966 and continues to present.	1	concrete with drilled holes	0.33	ft			65	26	7,469	Jesup	GA

Data item	Facility survey ID nr. FAC_ID	Surface impndt ID nr. IMP_ID	Liner failure ID nr. LF_ID	Year failure began FB_YR	Year failure resolved DR_YR	Description or additional information about liner failure	Liner ID nr.	Type of Surface Impoundment Liner	Liner thickness L_THICK	Thickness measure units L_Unit	Liner hydraulic conductivity LHC	LHC measure units	Year liner installed	Implied years to failure after installation	Surf.impndt surface area (m^2)	Surface impndmt location	
																City	State
51	7817	2	1	96	96		1	Polyethylene Geomembrane	60	mils			94	2	3,349	YORK	NE
52	7848	1	1	84	84		1	High Density Polyethylene	0.08	mm	0.00E+000	cm/sec	79	5	1,156	MT VERNON	IN
53	7848	1	1	84	84		2	Sand	2	ft			79	5	1,156	MT VERNON	IN
54	8178	1	1	90	90		1	sand	6	in			74	16	23,755	PERHAM	MN
55	8178	1	1	90	90		2	PVC	20	in			74	16	23,755	PERHAM	MN
56	8178	1	1	90	90		3	sand	12	in			74	16	23,755	PERHAM	MN
57	8458	1	1	91	91	Date failure began and discovered: unknown; Date resolved: deep well injection, did not solve leak.	1	sand	2	in			72	19	29,137	Stockton	CA
58	8458	1	1	91	91	Date failure began and discovered: unknown; Date resolved: deep well injection, did not solve leak.	2	polyethylene liner	6	mils			72	19	29,137	Stockton	CA
59	8458	1	1	91	91	Date failure began and discovered: unknown; Date resolved: deep well injection, did not solve leak.	3	sand	2	in			72	19	29,137	Stockton	CA
60	8458	2	1	91	91	Date failure began and discovered: DK; Date resolved: Deep well injection, did not solve leak.	1	sand	2	in			70	21	29,137	Stockton	CA
61	8458	2	1	91	91	Date failure began and discovered: DK; Date resolved: Deep well injection, did not solve leak.	2	polyethylene liner	6	mils			70	21	29,137	Stockton	CA
62	8458	2	1	91	91	Date failure began and discovered: DK; Date resolved: Deep well injection, did not solve leak.	3	sand	2	in			70	21	29,137	Stockton	CA
63	8742	1	1	90	90	estimates	1	Petro Mat Twice Spray Coated with Cationic Asphalt Emulsion	0.17	in			69	21	7,810	KENAI	AK
64	8761	1	1	86	86		1a	Gunite Concrete	3	in			77	9	5,946	Billings	MT
65	8761	1	1	86	86		1b	Asphaltic Concrete	4	in			77	9	5,946	Billings	MT
66	8761	1	2	96	96		1a	Gunite Concrete	3	in			77	19	5,946	Billings	MT
67	8761	1	2	96	96		1b	Asphaltic Concrete	4	in			77	19	5,946	Billings	MT
68	8761	1	3	98	99		1a	Gunite Concrete	3	in			77	21	5,946	Billings	MT
69	8761	1	3	98	99		1b	Asphaltic Concrete	4	in			77	21	5,946	Billings	MT
70	8761	2	1		89	Date Failure Began: DK	1A	Gunite Concrete	4	in			68		1,626	Billings	MT
71	8761	2	1		89	Date Failure Began: DK	1B	Fibermesh Concrete	4	in			89		1,626	Billings	MT
72	8761	2	1		89	Date Failure Began: DK	2	Asphaltic Concrete	4	in			68		1,626	Billings	MT
73	9194	4	1	92	92		1	HDPE membrane	60	mils	1.00E-009	cm/sec	92		2,787	THEODORE	AL
74	9194	4	1	92	92		2	Concrete	6	in	0.00E+000	cm/sec	87	5	2,787	THEODORE	AL
75	9194	9	1	97	97	Date Resolved: October 1997 (see also response to question C-14b)	1	HDPE membrane	60	mils	1.00E-009	cm/sec	76	21	5,638	THEODORE	AL
76	9194	9	1	97	97	Date Resolved: October 1997 (see also response to question C-14b)	2	sand	0.5	ft					5,638	THEODORE	AL
77	9260	12	1		95	The date failure and date discovered are Unknown.	1	Epoxy	0.05	in			95		642	MANDAN	ND
78	9260	12	1		95	The date failure and date discovered are Unknown.	2	Reinforced Concrete	4	in			58		642	MANDAN	ND
19	30					<Non-duplicative column totals			Min =	0.05			Min =	1		Non-duplicative total>	17
									Max =	1000			Max =	26			
									Mean =	63.4			Mean =	12.3			
									Median =	6.0			Median =	11.0			
									Data pnts =	78			Data pnt=	39			

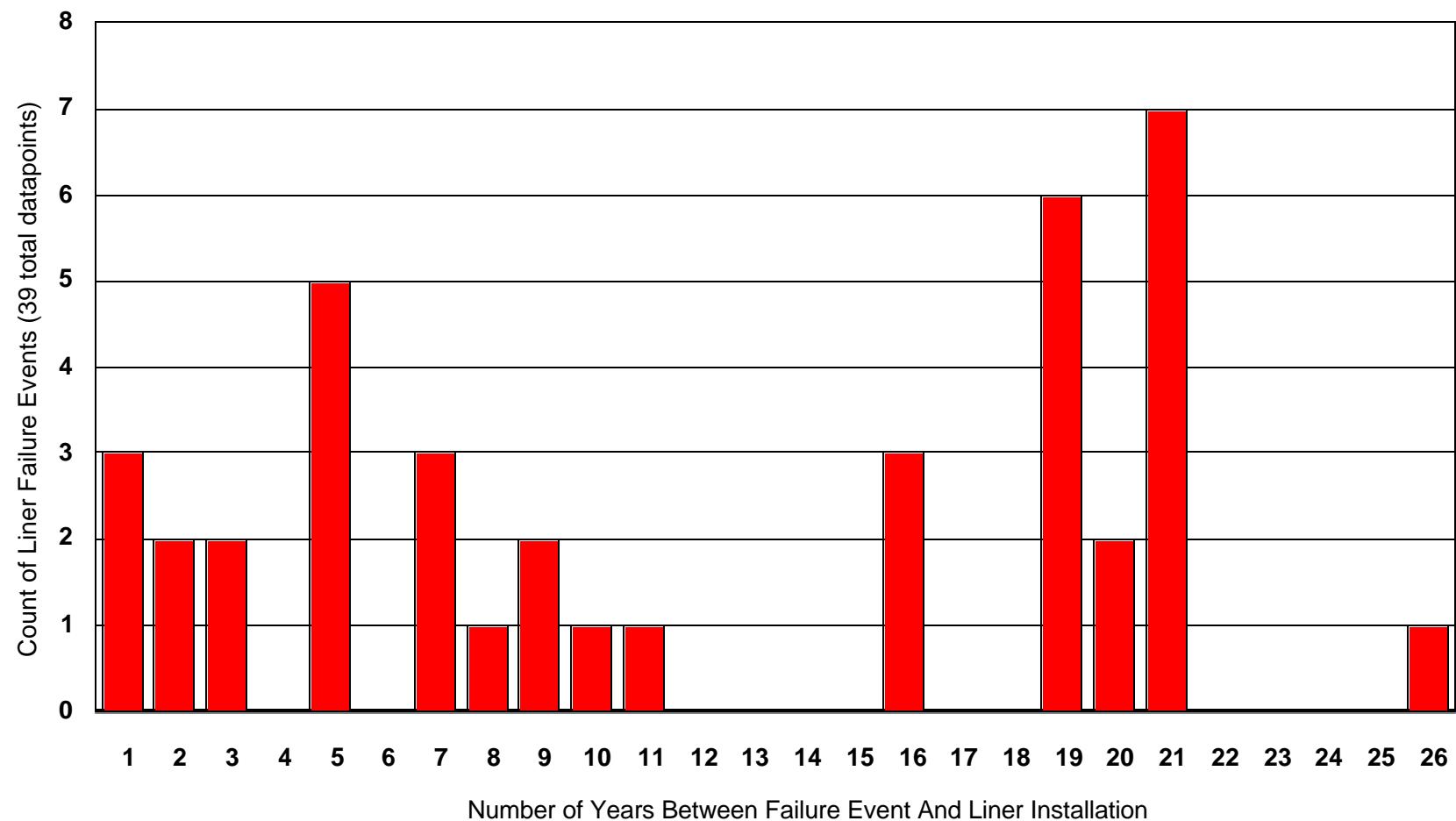
Source: US EPA Office of Solid Waste, "Industrial Surface Impoundments in the United States", EPA-530-R-01-005, March 2001, <http://www.epa.gov/OSWRCA/hazwaste/lcr/impdfs/sisrept.pdf>

Summary of Industrial Surface Impoundment Liner Failures
(Based on an EPA Survey Sample of 523 Surface Impoundments at 155 Facilities)



Average annual count of surface impoundments with at least one liner failure = 1.2 impoundments (1.2 of 523 sample = 0.23%)

**Summary of Years Until Surface Impoundment Liner Failure
(Based on an EPA Survey Sample of 523 Surface Impoundments at 155 Facilities)**



Median number of years to failure after liner installation = 11

7. Internet Website Sources

- ! USEPA RCRA Hazardous Waste Biennial Reporting System (BRS)
for Industrial Wastes Regulated as RCRA Hazardous**
- ! USEPA RCRAInfo Identity of Facilities
Which Generate or Manage
RCRA Industrial Hazardous Wastes**
- ! USEPA Toxics Release Inventory (TRI)
for Manufacture, Processing, Use,
& Environmental Releases of Chemicals**
- ! USEPA RCRA National Hazardous Waste
Constituent Survey (NHWCS)**
- ! USEPA Industrial Surface Impoundment Study (SIS)
of Industrial Wastes**

USEPA Biennial Reporting System (BRS) Database Query Possibilities (USEPA Envirofacts Website)

BRS Query Form - Netscape

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Bookmarks NetSite: http://www.epa.gov/enviro/html/brs/brs_query.html What's Related

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Facility Identification: Handler Name (Enter a partial or complete Handler Name)

Facility Identification Option Value:

Beginning With Exact Match Containing

Geography: State (two-character state abbreviation)

Geography Option Value:

Standard Industrial Classification: SIC Description (You can enter a partial description)

SIC Option Value:

Reporting Year: 1997 1995 1993 1991 1989

Origin Code:

Management Location: Both Offsite Onsite

Treatment System Code: [Click here to look-up a treatment system code.](#)

(Note: If a Treatment System value is entered, Management Location defaults to Onsite.)

Waste Origin: Both Wastes generated onsite Wastes received from offsite facility

Waste Code: [Click here to look-up a waste code.](#)

Form Code: [Click here to look-up a form code.](#)

Source Code: [Click here to look-up a source code.](#)

Document: Done

Envirofacts Warehouse - RCRAInfo Query Form - Netscape

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EPA United States Environmental Protection Agency

Envirofacts Warehouse Hazardous Waste Data

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Hazardous Waste Data Query Form

Search the RCRAInfo Database

The Hazardous Waste Query Form allows you to retrieve selected data from the Resource Conservation and Recovery Act Information (RCRAInfo) database in Envirofacts. Specify a facility using any combination of facility name, geographic location, standard industrial classification, and chemicals. You may also select an output option.

[User's Guide](#)

Facility Selection

Facility Identification:

Facility Identification Option Value:

Beginning With Exact Match Containing

Document: Done

USEPA Toxics Release Inventory (TRI) Database Query Possibilities (Envirofacts Website)

TRI Customized Query Engine - Netscape

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TRI Customized Query Engine

This search tool is undergoing renovation. Your comments are needed in order to ensure its usefulness. Please send your comments through the [TRI Feedback Form](#). Let us know what you tried to do, what worked and what didn't ... what you liked about it, and what you didn't like so much. Your suggestions and comments will help us make this site more useful for everyone.

This query engine allows you select any data element in TRI to build a tabular report or a Comma Separated Value (CSV) file for downloading.

There are four steps to using this query engine:

1. Select one or more of the subjects listed below, one at a time.
2. Select your tables of interest from the subjects selected.
3. Select columns (data elements or fields) from the selected tables.
4. Enter your search criteria to target specific records from the database.

Data Element Search Tool will provide you information on database data element (column), tables and subject areas that are used in Customized Query Search Engine.

The [Customized Query Engine User's Guide](#) will provide you with detailed information on how to use the Customized Query Engine.

Step 1: Start by selecting one subject to be the primary focus of your query.

Facility Information	Address and other location information about the facility.
Form R Reporting Form Information	Contains Chemical Name, TRI Chemical ID Number (i.e. CAS Number), and Reporting Year. Toxic Chemical Release Inventory Reporting Form (EPA Form R) submitted annually for each toxic chemical manufactured, processed, or used at each facility. Form R Part 1. Sections 1; 2.1; 2.2; 3 (column 1-3 across); 4.2 (a, b); 4.3, 4.4; 4.10; Part 11. Sections 2.1; 4.1; 8.8; 8.9; 8.11.
Release Information for Water, Air, Surface and Underground Injection	Total air emissions and releases to surface, land and underground injection, distinguished by the environmental medium code (AIR FUG, WATER, etc.).

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EPA - HWIR Hazardous Waste Identification Rule - Economic Assessment - Netscape

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Bookmarks NetSite: <http://www.epa.gov/epaoswer/hazwaste/id/hwirwste/economic.htm> What's Related

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(4) "National Hazardous Waste Constituent Survey Database" (1999). The USEPA Office of Solid Waste designed this survey in 1996 to collect information about the identity and concentration of chemical constituents in US industrial process hazardous waste. The information collected in this survey is organized into a new database, which consists of 11 different electronic files, which provide the following information:

-- [3-page February 1999 introduction \(13KB PDF\)](#) to the NHWCS database

-- [24-page May 1998 \(72KB PDF\)](#) USEPA Office of Solid Waste briefing package about the design and findings of the NHWCS.

-- [52-page March 1998 \(119KB PDF\)](#) documentation memorandum for the datafiles for the NHWCS.

-- [63-page October 1998 \(726KB PDF\)](#) summary report of the data contained in the NHWCS database, as well as an overview of findings from the survey.

-- A zipped file ([right-click to download - 487 KB](#)) which contains two Lotus-123 spreadsheet files that summarize key datafields in the NHWCS, as well as provide a frequency count of the co-occurrence of constituents in the survey wastestreams

-- A zipped file ([right-click to download - 548 KB](#)) which contains five separate

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